The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, JANUARY 13, 1906. No. 2.

Original Articles

THE PATHOLOGY OF THE KIDNEY.

SOME GENERAL CONSIDERATIONS.

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BOSTON.

There are few organs in the body in which both structure and circulation are so complex as in the kidney. There is some variation in the size of the kidneys, depending on the life of the individual. The increased exercise of function as in potators is accompanied by increased size. The congenital anomalies are chiefly those of position and do not especially influence either intimate structure or function. In the congenital absence of one kidney we find in the other practically the same tissue arrangement, but the amount is doubled. In no other secreting organ do we find such differentiation of structure as that represented by the glomeruli and tubules. It is possible to think of the tubules not only as glandular secreting organs with a remarkable differentiation of epithelium in different parts, but as serving simply as the excretory ducts of the glomeruli. No other organ in the body has precisely the same character of vessels or the same circulation as the kidney. The blood supply to the organ is enormous. Landergren has estimated that in a minute's time under the action of strong diuretics the amount of blood which passes through the kidney is equal to the weight of the organ. That is, an amount from four to nineteen times as great as the average supply of the other organs. Regarding the vessels of the glomeruli as capillaries from which they differ, however, in several respects, the blood pressure within them must be high, because they spring directly from arteries of relatively large caliber. The pressure outside them is low because the space about them is protected from tissue pressure by the capsule. In the interior of the tubules there prevails normally the same low pressure, the circular wall of the epithelium preventing the action of tissue pressure. While it is true that the secretory pressure is usually low, various pathologic conditions show that the secretion can take place against greatly increased pressure. After passing through the glomerular vessels the blood again enters a series of long capillaries. How numerous these capillaries are can only be appreciated by the study of the injected kidney. From the capillaries the blood enters into numerous thin walled veins in which the pressure is low, and current slow, the pressure having been almost obliterated by the two capillary systems which intervene between the arterial pressure and the veins. The tendency of foreign cells, and, in certain cases bacteria, to accumulate within the veins is due to the slowness of the current.

There is a marked capacity for repair of injury in the kidney and but little capacity for perfect regeneration of tissue. The general law of the inverse relation between high differentiation of structure and capacity for regeneration holds good in the kidney, as does also the law that capacity for both regeneration and repair diminishes with age. After extirpation of one kidney the remaining organ fulfills the function of both and does this by increase of tissue by growth. Epithelial cells become larger and more numerous, tubules larger and longer, and glomeruli larger, but after the completion of development there is no new formation either of tubules or glomeruli. The embryonic development of the kidney is delayed until some time after birth. The completion of development is readily recognized by the absence of embryonic glomeruli. The study of the kidneys in a large series of children who died of diphtheria showed embryonic glomeruli constantly present at two years and rarely present up to the sixth year.

The physiologic function of both kidneys is the same. The activity of secretion depends on the rapidity of blood flow through the organ, and on the activity of the renal epithelium. There seems now little doubt that there is a differentiation in the secretory function of the kidney in that the water of the urine comes chiefly through the glomeruli and the solids chiefly through the epithelium of the tubules. It is also true that certain portions of the tubules differ in function. The rapidity of blood flow through the kidney is regulated both by the general arterial pressure and by the varying degrees of dilatation of the renal arteries. Under normal conditions the kidneys discharge from the body the products of tissue waste represented chiefly by urea. They regulate also the concentration of the blood; their activity is excited by an increase in blood volume due to an increase of water. Under conditions of disease they remove from the body certain abnormal soluble substances, whether these are introduced from without or formed in the body as the result of defective metabolism or by the action of bacteria.

The kidney, like the other tissues of the body, shows various impairments of structure in old age, consisting in destruction or degeneration of the secreting structure, accompanied by increase in connective tissue. In the interpretation of these senile changes we are confronted with the usual difficulty of determining how much they are due to interference with circulation from the constantly accompanying arterial disease, and how much to the gradual wearing out of tissue. To these causes must certainly be added the accumulated effect of slight lesions with the constantly increasing inability of repair. These slight lesions, though of themselves relatively unimportant, may gradually increase the initial damage by interfering with the circulation or in other ways. Under normal conditions, aside from the imperfectly understood cases of physiologic albuminuria, no albumin appears in the urine. Its presence is usually an indication of damage to the glomerular epithelium. Although such cases are rare, it would seem possible in a purely focal inflammatory lesion of the

pyramids for an albuminous exudation to enter the tubules. How dependent the presence of albumin is on damage of the glomerular epithelium is shown in cases of the common acute non-suppurative interstitial nephritis of the infectious diseases. A high degree of this leading to marked changes in the tissue may be present without any involvement of the glomeruli and without albuminurea. The published cases of acute nephritis without albuminuria are probably of this character. The epithelial covering of the glomerulus is probably easily damaged and easily repaired.

The most easily understood lesions of the kidney are focal in character and due to the presence of bacteria in the tissue. The infection may be either hematogenous, the bacteria entering from the blood stream, or urinogenous, the bacteria entering from the urinary passages. The latter affections may be either ascending, from the bladder and ureters, or descending from a focus in the cortex. Bacteria often pass through the two capillary systems and lodge in the veins of the pyramids. This is particularly the case in hematogenous infections by the staphylococcus aureus. In this connection comes the question of the passage of bacteria through the intact epithelium. Experimentally this has not been shown to take place. It is true that in certain of the infectious diseases, notably in typhoid fever, bacteria are found in the urine, but it has not been shown in these cases that the kidneys are intact or that the bacteria come from the kidneys. That the kidneys may be injured by interference with the circulation is also evident. The pressure in the veins of the kidney is low and the exit of blood must be interfered with by obstruction in front, as in chronic passive congestion. The kidney is also damaged by obstruction of the urinary outflow. The damage here results both from the effect of the increased pressure within the tubules and on the epithelium and from the interference with the circulation produced by the increased tissue pressure within the kidney and the increased pressure in the pelvis. It is not possible to consider arterial hyperemia of the kidney as a pathologic condition. The blood supply of the kidney is regulated by the activity of the organ. That the activity may be excited and the blood supply increased by the presence of substances in the blood which are excreted by the kidney is evident, and also that such substances may damage the organ by injuring the epithelium of glomeruli and tubules and the endothelium of the blood vessels. The hemorrhages which are frequently found in connection with acute toxic hyperemia are due, not to the increased pressure, but to endothelial injury.

How the varying degree of damage to the kidney which constantly accompanies diffuse arteriosclerosis is brought about we do not know. These changes consist in degeneration and destruction of parenchyma and increase in interstitial tissue.

It is generally accepted now that the interstitial change is secondary to the damage of the parenchyma. There is no evidence in favor of a general fibrosis or independent increase of connective tissue in arteriosclerosis. There is, of course, in arteriosclerosis interference with the circulation, loss of regulatory power of arteries, increased arterial pressue, the injurious effect of substances in the blood due to deranged metabolism elsewhere, and the constantly increasing effect on the kidneys themselves, of their impaired action. It is probable that the condition in the kidneys is due to the combined effect of a great many factors rather than to any single one.

The greatest difficulty in understanding the pathology of the kidney is found in the acute, subacute and chronic diffuse lesions of the kidney not due to alterations in the flow of either blood or urine, nor to the immediate action of bacteria.

The acute interstitial non-suppurative nephritis gives the least trouble. It is found in acute infectious diseases, notably in the acute exanthemata, and consists in the presence in the blood vessels and interstitial tissue of the kidney of cells belonging to the lymphoid series which are formed in the bone marrow, spleen and lymph nodes, and which are brought to the kidneys by the blood. They accumulate in the renal veins, pass from these into the interstitial tissue and proliferate actively in both places. To what their accumulation in the renal veins is due, whether to an attraction exerted by the kidney or to the mechanical conditions of the circulation, I do not know. Unless the cell accumulation is so great as to interfere with the circulation or nutrition they need not give rise to any interference with function, though usually degenerative changes in the kidney due to the toxins of the disease accompany the interstitial changes. These cells never accumulate in the capillaries of the glomeruli, but are found to a slight extent in the capillaries of the cortex and chiefly in the veins of the pyramids.

Degeneration of the epithelium of the kidney varying in character and in degree is the most common condition found in all cases of diffuse nephritis. It is often exquisitely focal, affecting groups of tubules. It often shows a remarkable selection. Thus the degeneration which is constantly found in diabetes only affects the cells of Henle's loops. In cases of diphtheria I have found hyaline degeneration with extensive cell destruction confined to the proximal ends of the convoluted tubules. The degeneration may vary from such slight alterations of protoplasm or nucleus up to complete necrosis. The injured cells, entire or in fragments, may be desquamated and make their appearance in the urine. The degeneration may be the only change or be accompanied by extensive alterations of structure. If the degeneration does not affect the glomerular epithelium it may not be accompanied by albuminuria. Extensive degeneration may produce but little change in the microscopic appearance of the kidney.

Of the more severe lesions of the kidney due to the diffuse action of soluble substances, one group may be separated in which the lesions in the glomeruli are the most obvious condition. Severe lesions of the glomeruli do not occur alone, for they are all of such a nature as to interfere with the circulation in the glomerulus, and as the circulation of the kidney demands that the chief mass of its blood must first pass through the glomeruli, any interference here is felt in the remainder of the organ. The glomerular changes are varied. One of the most interesting is the obstruction of the vessels by peculiar hyaline thrombi, which Flexner interprets as being formed by agglutinated red blood corpuscles. This condition is rare, and I have found it most often in cases of staphylococcus septicemia, but the most marked case was in a kidney from acute plague which was sent from Manila. The most common cause of the glomerular affections I believe to be acute infections. Some organisms seem to be more inclined to give rise to them than others. They are found in the acute exanthemata, and are due, not to the specific agent of the disease, but to the organisms of the secondary infections. We have had a number of cases of glomerular nephritis, in which

the accompanying infection was acute endocarditis, due to the pneumococcus. The condition is not due to the direct action of bacteria, but to the action of toxic substances produced either by the bacteria or by the tissues. The glomerular affections may be acute, subacute or chronic. Clinically, they are usually accompanied by edema, the relation of which to the nephritis is imperfectly understood. The chronic cases lead to a small, fatty rather pale kidney with an irregular surface, to which the capsule does not cling closely.

The other form of chronic nephritis (chronic diffuse, chronic interstitial nephritis), slow in process, marked by slow destruction, affecting all parts of the kidney, but the glomeruli least and usually secondarily, with a marked increase in connective tissue, which of itself increases the damage, is most usually accompanied by arteriosclerosis.

The disease is composite; not one organ, but many are affected. The determination of the inter-relation of renal disease with defective metabolism, bacterial poisons, vascular and cardiac disturbances, dropsy and edema, lowered resistance to infections, must continue to be one of the paths along which investigation and experiment leading to exact knowledge must follow. The possibility of the production in animals of renal diseases, offering much similarity to those of man, which has been shown, is sure, by giving a field in which investigation can be more exact, to lead to advance of knowledge.

A question of great interest from both the clinical and pathologic point of view is that of the origin of tube casts. I think it is certain that these may be formed directly from the cells of the convoluted tubules by hyaline degeneration. Balls of hyaline material appear in the swollen cells, which finally break down, and the separate masses fuse together and pass into the lumen. This hyaline degeneration, though common in all pathologic conditions, is most marked in amyloid disease, and in the acute infections in which the highly refractive waxy casts are found. Casts into whose formation fibrin enters may be formed by an inflammatory exudation coming from the glomeruli or tubules. It is also possible that casts may be formed from a change in albumin during its passage through the tubules. The first two methods of formation are certain, though they will not account for the casts in all cases. The granules in the granular casts I think always come from the partial or complete disintegration of epithelium.

I present here some of the results which have come from the anatomic study of the cases of nephritis taken from the autopsies of the last ten years at the Boston City Hospital. The autopsies are carefully carried out, all organs are described and weighed and cultures made. The description embraces both the macroscopic and microscopic conditions, and the sections are preserved for future reference and control. The routine microscopic examination embraces the kidneys, liver, spleen, heart, lungs, pancreas and lymph nodes, and is extended to all pathologic conditions found outside of these organs. In going over these autopsies I have in many cases rejected the autopsy diagnosis on referring to the preserved sections, particularly in cases in which chronic interstitial nephritis was diagnosed. If the diagnosis of chronic interstitial nephritis is made in all cases which show some degree of atrophy of parenchyma and increase in interstitial tissue, few individuals over 50 escape it.

The diagnosis must be made from a consideration of the extent, the degree and the diffuseness of the lesions. I have only considered those cases as chronic interstitial nephritis, in which there was diffuse atrophy of the cortex, generally associated with decrease in weight of kidney, adhesion of capsule and irregularity of the surface. Glomeruli, as well as tubules, are affected, the main lesion being degeneration with atrophy. It is seldom that all parts of the kidney are equally affected. Enormously hypertrophied glomeruli and tubules are found along with those which have undergone atrophy, and the anatomic examination will not enable us to say to what degree this compensating hypertrophy has restored function. That it may do so seems apparent from the frequency with which the condition is not diagnosed clinically.

In the ten years there were 80 cases of chronic interstitial nephritis; 33 in females, 47 in males. Four of the cases were under 20, the youngest being a child of 2 years, in which there was a combination between acute non-suppurative interstitial and chronic interstitial nephritis, the condition following scarlet fever. The heart in this case was hypertrophied, weighing 165 grams. But little importance can be attached to the age, owing to the rarity of autopsies on children. Taken as a group, the cases show a considerable degree of heart hypertrophy. The cases are included in which the hypertrophy was accentuated by causes outside of the kidneys. In the 33 females the average weight of the heart was 412 grams. There were four marked exceptions to the hypertrophy. In one, aged 48, the kidneys with advanced interstitial atrophy weighed 165 grams, and the heart 275 grams. In one the heart weighed 200 grams, the kidneys 180 grams; in one there was typical interstitial with marked atrophy and death from uremia, the kidneys weighing 110 grams and the heart 260 grams; and in a case, aged 65, the heart weighed 260 grams, with kidneys weighing 210 grams. The males showed about the same degree of heart hypertrophy, the average weight of the heart in the 47 cases being 494 grams. Here also there were exceptions. In one case in a large individual the heart weighed 390 grams, and the kidneys, in which the lesions were of high degree, weighed 165 grams. Two of the cases of males without heart hypertrophy were senile with atrophy of all organs, and in another case the renal lesions were not of great degree. There were four hearts of over 700 grams, and in six others the weight was over 600 grams. Without exception in both males and females, the largest hearts were given by the combination between arteriosclerosis and chronic interstitial nephritis in large and well-nourished individuals. There is a close association between arterial disease and chronic interstitial nephritis. Which of the two conditions should be regarded as the primary and which the secondary, or whether they should both be regarded as parts of a whole can not be determined by anatomic investigation. It is certain, however, that the conditions can exist separately. Among the cases many can be selected which show both a high degree of arteriosclerosis involving even the renal arteries with but little change in the kidney and *vice versa*. The extreme degrees of atrophy in renal tuberculosis show no relation to arterial disease.

Closely associated with chronic interstitial nephritis are the cases of amyloid infiltration. The amyloid may be limited to the glomeruli and the different vessels or it may be more generally deposited. It may occur in

kidneys as simply superadded to chronic interstitial changes or it may be the predominant lesion. With it there is always associated degeneration of epithelium, marked by presence of fat and hyaline, and a varying degree of atrophy. In the extreme degree of amyloid infiltration characterized by a small pale kidney with irregular surface, no tissue approaching normal character may be found. The most of the glomeruli are converted into completely amyloid masses, and all the tubules belonging to them are atrophied and replaced by connective tissue. The amyloid kidney is in one way separated from chronic interstitial nephritis, and that is by the absence of heart hypertrophy. Thirty-six cases of amyloid infiltration of the kidney were found, seventeen in females and nineteen in males. The average weight of the heart in females was 269 grams and in males 320 grams. In the females there were two cases in which some degree of heart hypertrophy was found. In one case there was extensive arteriosclerosis, chronic interstitial nephritis with amyloid and in the other case arteriosclerosis with slight amyloid confined to the glomeruli. In the males there was one case of hypertrophy, the heart weighing 525 grams. In this there was arteriosclerosis with aneurism and an osteomyelitis, to which the amyloid infiltration was probably due.

There were twenty-two cases of subacute and chronic glomerulonephritis. In this form of nephritis the lesions are certainly primary in the glomeruli and consist in changes which must interfere with their function by means of the cell degeneration and the occlusion of vessels. The term chronic parenchymatous nephritis, which is that generally used to designate the condition, is less descriptive of the lesions than is the term chronic interstitial nephritis, descriptive of atrophy with increase of connective tissue. It is difficult to estimate the relation of this lesion to heart hypertrophy, owing to the frequency of the association of heart lesions which in themselves should be regarded as causes of hypertrophy. Excluding such cases, the weight of the heart in males was 433 grams, denoting a considerable degree of hypertrophy, though much less than in chronic interstitial nephritis. There is one form of glomerulonephritis to which I wish to call attention. It consists in homogeneous thickening of the walls of the vascular tufts of the glomerulus, thereby narrowing the lumen. It may affect all the vessels or occur in patches, and may lead to complete obliteration of the entire glomerulus or of single groups of vessels. The thickened walls do not give the reaction of connective tissue in staining. The thickening is not due to the presence of demonstrable fibers. There was nothing in the histories of the individuals nor in the associated lesions to throw any light on the condition.

Acute glomerular nephritis (acute parenchymatous nephritis) was found in thirty-two cases, twenty-two male and ten female. The acuteness of the process was judged by the prevailing cellular character of the lesions and the absence or slight development of connective tissue. I have elsewhere called attention to the frequent association of this lesion of the kidneys with pneumococcus infections, particularly with acute pneumococcus endocarditis. In the numerous autopsies on acute croupous pneumonia only in two cases was there the complication of acute glomerular nephritis. Why this, the most frequent form of pneumococcus infection, should so rarely be accompanied by nephritis I do not know. Next to the pneumococcus the frequent associated infection is with the streptococcus pyogenes. Cultures of the kidneys in these cases show the presence of the infecting organisms, but they can not be regarded as directly causing the lesions. The lesions are too diffuse to be regarded as produced by direct bacterial action, and when organisms are found on microscopic examination they are not associated with the lesions. None of the cases of typhoid were complicated by nephritis. Of all of the acute infectious diseases, acute endocarditis is most frequently accompanied by this most serious form of nephritis.

One of the most interesting forms of nephritis is the acute interstitial non-suppurative form. It has nothing to do with chronic interstitial nephritis, for this has no acute form, but is the result of a slow, progressive disease. Acute glomerular nephritis passes into the subacute and chronic form, and probably mild degrees are recovered from. Acute interstitial non-suppurative nephritis consists in the accumulation in the interstitial tissue of the kidney of large cells belonging to the lymphoid series which are brought to the kidney by the blood. The cells are generally in foci situated beneath the capsule, around the glomeruli, and just above the pyramids. Only in the most extreme cases is there a diffuse infiltration of all parts of the kidney. There may be very considerable lesions without producing any easily recognized changes in the microscopic appearance of the kidneys. When the lesion is very pronounced and diffuse, the kidney is greatly enlarged, the capsule is tense, the markings are obscure, the tissue pale, succulent and resembles the section of a lymph node in lymphatic leukemia. The largest kidneys I have found were 480 grams in a child of 3 years; 300 grams in a child of 5 years, and 250 grams in a child of 4. The chief interest in the condition of the kidneys is that the cell infiltration is not secondary to injury or degeneration. It may exist with normal epithelium. The glomeruli are never affected. The large cells, prelymphocytes, are formed in the bone marrow, spleen and lymph nodes. They enter into the blood and seem to be mechanically held in the slow capillary and venous circulation. It is evident that they migrate through the wall and proliferate both within the vessels and in the interstitial tissue, as is shown by the numerous nuclear figures in these places. Polynuclear leucocytes are only found among them when there is associated necrosis. There were found twenty-eight cases with this condition. All were in cases of diphtheria or scarlet fever, with the exception of one case, that of croupous pneumonia. I have elsewhere called attention to the frequency of acute interstitial nephritis in diphtheria and smallpox and discussed the origin of the cells.

The study of the pathologic anatomy of the kidneys has thrown but little light on the essential nature of those acute and chronic diseases in which lesions of the kidneys form a part of the pathologic process. It early led to a classification of the lesions and to a nomenclature which was intended to be expressive of their nature and histogenesis, but which is not. Even the term nephritis has come to mean merely a diseased condition of the kidneys. The anatomic study has led to a better appreciation of the extraordinary complexity of chronic disease and to a recognition of the interrelations of affected organs.

There are certain conclusions forced on one by the careful routine examination of the kidneys in a large number of autopsies. Probably the most important is that the lesions of the kidneys are only part of a whole. Almost invariably there are lesions in other organs

sometimes of the same general character as the lesions in the kidney, sometimes of a different character. We can not consider kidney disease as an entity. The injuries which are produced in the kidneys are either due to agents which are formed in the body as a result of disease in other organs or they enter the body from without, affecting the kidneys secondarily. Even the simplest lesions due to the direct action of bacteria are secondary to infections elsewhere. The frequency of lesions, especially when the examination is by the microscope as well as by the naked eye, is striking. Apart from the acute degenerations of epithelium which are almost constant in the acute infectious diseases, chronic lesions of greater or less degree are common, and with increasing age increase greatly in frequency and in degree. It is probable that we rarely pass through an acute infection without some injury being produced in the kidneys. When the injury produced is of such a character that perfect repair can not take place the evidences of it will remain. Slight injuries may produce no impairment of the renal function and there may be no means of clinical recognition by the usual tests of albumin and casts. Provided the injury leads to complete destruction of glomeruli and tubules with consequent absence of function in the part affected, as in the case of an infarction, neither casts nor albumin may appear in the urine, though the remaining tissue be insufficient for the work of the organ to be accomplished. On the other hand injuries which have not led to complete destruction and where the injured tissue functions, though imperfectly, will be accompanied by the clinical evidence of albumin and casts. The presence of albumin and casts may simply mean that a part, and often a very small part, of the tissue is functioning imperfectly, though the whole amount of renal tissue and function may be ample. Anatomically it is not uncommon to find casts in a few tubules connected with foci of injury, the remainder of the tissue being perfectly normal. Comparing clinical reports of routine urine examinations with the results of routine necropsies, it often appears that too much importance may be attached to the presence of albumin and casts, though they always mean injury of the organ. Too much importance can not be attached to the results of urinary examination directed to the ascertaining of kidney sufficiency. In cases of acute interstitial nephritis of high degree with compression of tubules and destruction of epithelium, the routine clinical examination has often given only the common "slight trace of albumin" and the anatomic examination showed no casts in the tubules. In such cases it has seemed sure that the function of the kidney must have been impaired, though the clinical examination gave no evidence of it.

It is difficult to understand the association of lesions, which is shown at autopsies. Thus we know that in the great majority of cases atrophy of the kidneys will give rise to heart hypertrophy. The average weight of the heart in chronic interstitial nephritis is far above the weight of the heart at corresponding ages. But there are many exceptions even to the association between renal atrophy and heart hypertrophy. We may find a great degree of heart hypertrophy associated with slight atrophy, and a great deal of atrophy with but slight change in the heart. It is not uncommon to find in hydronephrosis or in chronic pyelonephritis or in chronic renal tuberculosis extreme renal atrophy with a heart of normal size. The absence of heart hypertrophy in renal atrophy is particularly striking in the case of amyloid disease. Even the association of such conditions as renal atrophy and arteriosclerosis, which, in the absence of amyloid, seem sure to lead to heart hypertrophy, fail to produce this if any degree of amyloid infiltration be present. At present we are without any acceptable hypothesis in explanation of this association, and the number of hypotheses which have been advanced serve to show our ignorance. The same thing is true in regard to edema. We are accustomed to think of the association of certain forms of nephritis, particularly those involving the glomeruli, with edema, but the exceptions are almost as frequent as the rule.

It is not probable that much light will be thrown on the numerous obscure questions relating to nephritis by anatomic investigations. The work which has been done in pathologic anatomy in chronic disease is imperfect and has consisted chiefly in making artificial classifications and giving these names. The study of the histogenesis of lesions has been fruitful in enabling us to ascertain the general sequence of lesions, but has thrown little light on their causes and interrelations. At an autopsy even under the best conditions it is impossible, in the absence of definite questions, for the routine examinations in every territory to be so fully carried out that they will shed much light on the disease. The questions which are present to the pathologist and which he endeavors to answer in his work are not the same as are presented to the clinician by his study of vital phenomena, and the clinician can not take the observations of the pathologist and seek by them to answer his questions. The observations of the pathologist are directed by a different set of questions. What is needed in the study of chronic disease is not the attempted analysis of numbers of cases and dividing them into groups, but the careful placing of questions by the clinician and pathologist and the thorough study of individual cases by clinical, pathologic, chemical and anatomic methods. The questions should be divided into their simplest components, and the hypotheses derived from study should be tried by animal experiments. The acute infectious diseases seemed more obscure than did chronic diseases before their etiology was ascertained, and even with this and the possibility of simple direct animal experimentation the knowledge which has enabled us to form acceptable hypotheses in explanation of certain acute infectious diseases has come but slowly. Knowledge of chronic diseases which will enable us to form acceptable hypotheses in explanation can come in no other way.

THE RELATION OF THE KIDNEYS TO ECLAMPSIA.*

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The sources of my information for this paper are:

1. Statistics from hospitals and private sources on eclampsia and kidney conditions.

2. The literature on eclampsia and metabolism.

3. Personal observations on urea elimination in pathologic conditions of pregnancy.

4. Experiments on the muscular irritability of pregnant and non-pregnant animals.

From the 54,010 records of births in which I could get at least a few important data concerning the frequency of eclampsia in cases of nephritis, renal irritation and

*Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

toxemia, and the frequency of these conditions without eclampsia, the following facts are shown:

The proportion of eclamptics to births is 1 in 105 cases.

Eighteen and two-tenths per cent. of the eclamptics whose urine was examined just before or after convulsions showed only evidences of "renal irritation" in the urine.

Eighty-one and eight-tenths per cent. showed "nephritis" under the same conditions. "Nephritis" was defined on the circular sent to physicians and hospitals seeking information, so as to include cases showing 0.1 per cent. of albumin and casts, or less marked urinary findings with marked edema of the body. "Renal irritation" included cases with no edema and less marked urinary findings, while "toxemia" included the cases of headache, vomiting, dim sight or abdominal pain (other than labor pain) near the time of delivery.

TABLE 1.

Figures furnished by hospital or physician.	Total Births.	Eclampsia Cases.			Eclam. Cases no Previous Ur'n Ex			Eclam. Cases Sh'w'ng Before Attack.				Non-Eclam. Cases Showing.				Thre't-ened toxe'ia edema or both	
		Primiparæ.	Multiparæ.	Unclassified.	Later Nephritis.	Renal Irr'tion.	Unclassified.	Nephritis.	Renal Irr'tion.	Unclassified.	Eclampsia c ses urine negative before attack.	Nephritis.	Renal Irr'tion.	Toxe. without renal sympt.	Unclassified.	With nephritis	Renal Irr'tion.	Unclassified.
New Engla'd hos., 10 yrs..	2307	19	10		5	0	..	23	1	..	. .	13	36	4	. .	1	4	
Lynn hospital, 10 yrs....	413	10	6	.	. .	. .	12	2	2	..	. .	3	0	1	.			
St. Eliz. hos Bost., 10 yrs.	680	5	3	. .	5	..	..	1	0	..	. .	10	3	1	. .	2	1	
Mass. homeopathic, 10 yrs.	1497	12	5	. .	8	2	..	4	1	..	.	8	3	2	. .	1	1	
Bost. Lying In, 10 yrs.....	23521	102	64	. .	82	8	..	25	15	..	4	18	?	?	. .	22	6	
Worcester city hospital	1900	37	12	. .	20	9	..	17	3	..	. .	22	7	5	. .	4	3	
Colum. hosp. Wash'g. D.C.	3014	34	11	. .	. .	. .	26	9	10	..	. .							
B. C. Hirst. Philad'lphia	7500*	. .	. .	64														
A. L. Smith, Montreal...	1400*	7	1	. .	. .	. .	..	8	..	..	. .	10	10					
Johns Hopkins, Balt....	1819	. .	. .	44	. .	. .	38	6	..	..	1	10	..	. .	655	18	6	
J. B. DeLee. Chicago.	7000*	. .	.	44	. .	. .	9	. .	. .	35	. .	. .	..	..	..	..	..	6
C. A. Kirkley, Toledo, Ohio	1100*	3	2	. .	4	..	..	1										
Alex. Maternity, Drs. A. Brown & Von Hoffman.†	1000	7	3	. .	. .	. .	5	5	..	..	. .	41	30	2				
F. Crittenton home, San F.	453	5	0	. .	. .	. .	2	3	..	..	. .	10	4	1				
S. F. Lying In																		
E. Harrison.	109	0	0	. .	. .	. .	..	. .	. .	..	. .	1	6	2				
Adelaide Brown, S. F.	297	2	2	. .	.	. .	..	. .	. .	..	1	9						
Totals	54016	243	119	152	124	19	92	104	32	35	6	148	99	18	655	48	27	6
Totals		514			235			171				920				81		

*More or less. †San Francisco.

TABLE 2.

SUMMARY SHOWING RELATION OF KIDNEY CONDITIONS TO ECLAMPSIA IN CASES WHERE FULL DATA WAS OBTAINED.

Eclamptic cases with nephritis before or after convulsions...	228	
Eclamptic cases with renal irritation only before or after convulsions.	51	(18.2%)
	279	
Eclamptic cases with nephritis or renal irritation before or after convulsions (data not enough to classify).	127	
Eclamptic cases with no record of urinary findings.	108	
	514	
Non-eclamptic cases with normal urine	10,360	
Non-eclamptic cases with "nephritis"	196	
Non-eclamptic cases with "renal irritation" only	787	(7%)

Of the non-eclamptic cases in a series in which 10,360 had normal urine, there were 196 cases of nephritis and 767 of renal irritation.

The full table shows the marked variations in the frequency with which these symptoms occur in different hospitals—depending probably on the care with which the urines are examined in each place. The column marked "eclamptics-urine recorded negative before convulsion"—is significant. The 4 cases recorded in the Boston Lying-in figures may possibly be accounted for by the careless work of students who do the out-patient work. The Johns Hopkins case is specially referred to by Dr. Little as a case where the only record of urine examination before the attack was the statement "urine negative." Dr. A. Brown's case was one in which the patient's urine was free from albumin a week before the attack. Immediately following the examination, the patient caught a severe cold and had temperature for several days prior to the eclampsia. The urine was not examined again until after the attack. That albuminuria is a more frequent accompaniment of pregnancy than these figures indicate is well shown by the examinations of Little of Johns Hopkins and of Trautenroth. Their results are shown in Table 3.

This makes it clear that the kidneys show the strain of the pregnancy and labor by an elimination of albumin in practically every case. In a vast majority of the cases there is nothing to show that this strain is significant of more than the similar appearance of traces of albumin and occasionally casts in the normal individual after exercise. Darling has shown that albumin enough to coagulate solid on boiling may result in the urine of a previously normal person from the prolonged strain of a boat race, and that practically all athletes show traces of albumin and casts after prolonged effort, even when accustomed to it.

TABLE 3.

TABLE OF STATISTICS SHOWING FREQUENCY OF ALBUMINURIA IN PREGNANCY WHERE THE SUBJECT WAS RECEIVING SPECIAL INVESTIGATION.

Urine in	Pregnancy.		Labor.	
Cases	Little Johns Hopkins.) 715	Trautenroth, 100	Little (Johns Hopkins,) 590	Trautenroth. 59
Negative	49.2%	50.5%	37.%	1%
Albumin.	48.8%	45.5%	62.%	99%
Albumin and casts	10.1%	4.0%	18.%	28%
Casts, no albumin	1.9%			

LITTLE (JOHNS HOPKINS) IN SPECIAL SERIES OF 100 CASES.

	Pregnancy.	Labor.
Negative.	54%	10%
Albumin.	46%	89%
Albumin and casts	14%	41%
Casts, no albumin	....	1%

The albumin may mark a pathologic condition of the kidney arising during pregnancy or the exacerbation of an old kidney lesion. The occurrence of albumin in large amount so constantly with eclampsia suggests a dependence of both on some common cause. Trautenroth has shown that the death of the fetus in utero has stopped a marked albuminuria, and Strumer reports a remarkable case of a seventh pregnancy in a woman who had eclampsia in her second and fourth confinements. Her other pregnancies had been normal. At time of admission the urine was scanty and loaded with albumin, both feet edematous, and she had headaches. A milk diet and 15 grains of thyroid extract a day resulted in the disappearance of all symptoms in 9 days, including the albumin. She left the hospital under protest, but was brought back 11 days later, having just had 3 convulsions.

The occurrence of casts far more frequently in the urine of multiparæ than in primiparæ is a strong argument against the renal origin of the eclampsia poison for 80 per cent. of the cases of eclampsia occur in primiparæ, according to German statistics, where the prior kidney condition is more favorable. Lange finds also a common extra-renal cause for a number of the phenomena of the toxemia of pregnancy, particularly the albumin. He shows that the ordinary thyroid enlargement during pregnancy disappears under administration of thyroid, increasing again at the cessation of the treatment. In the 133 cases examined for thyroid changes, 3 were doubtful, 108 showed this enlargement, of whom 2 only had albuminuria. One of these was nephritic, and none developed eclampsia. In the remaining 22 where there was no enlargement, 20 had albuminuria, 16 with casts, and 6 of these developed eclampsia. Lange removed one-fifth of the thyroid in 10 pregnant cats; 2 died in coma 23 and 38 days after operation, 3 had convulsions 23 and 25 days after operation. Of these 5, 3 had albuminuria and fatty changes were found at autopsy in the liver and kidneys. No changes were noted in the other 5 cats during the pregnancy, but, on examination after they were killed, similar changes were found in the organs of 3.

The theory on which eclampsia was first held to be dependent on kidney disease was, of course, this association of albumin with the attacks and the similarity of the convulsive seizures in eclampsia to uremic convulsions. I have tried to make it plain that albuminuria is almost the rule in pregnancy, particularly at the time when eclampsia occurs, and that even severe nephritis and extreme albuminurias occur commonly without signs of eclampsia. Renal insufficiency with retention of toxic waste products, increased by the incident of pregnancy, was the explanation which arose from this conception of eclampsia. Urea naturally held the first place as the toxic agent, as it makes up so large a part of tissue waste and was so long associated with uremia as its cause. Because this view still lingers with some few, I have shown on diagrams the extreme variations in the excretion of urea in 3 cases of pregnancy—the first a case of post-scarlatinal nephritis, with marked edema and an amount of albumin varying from 0.1 per cent. to 1.6 per cent. in the last month of pregnancy and the month after it; the second, a case which had had eclampsia in two previous pregnancies and had a trace of albumin with casts in this pregnancy; the third, a normal case on full diet for comparison. These first two cases were put to bed on a milk diet while these observations were made. The case which had previously had eclampsia also underwent this régime for three periods of 10 days each during the earlier part of her confinement.

CASE 1.—Mrs. W. B. First pregnancy. Scarlatinal nephritis since childhood. Urine found, early in pregnancy, to contain nearly 0.1 per cent. of albumin, with hyaline, granular and epithelial casts. The patient was brought to San Francisco and kept in bed and a diet given her, consisting solely of milk, for 4½ weeks before her confinement and for nearly a month after it. Chart 1 illustrates the gradual increase in the amount of albumin and the decrease in the urine and the urea, and their extreme variation. It shows further the striking increase in the urine and urea after confinement. That pregnancy is a very severe tax on such a case there is no doubt, although this particular patient bore a second pregnancy two years later without having at any time over 0.1 per cent. of albumin. It is a significant point that on the days of free movements of the bowels, when the urine and urea elimination was low, the percentage of albumin increased strikingly, more than doubling on several occasions.

CASE 2.—Mrs. L. (Chart 2). Has twice had eclampsia at 7 months. Her urine at the beginning of the third pregnancy was found to contain but a minute trace of albumin and a few hyaline and granular casts. For periods of 10 days each, during the middle of the pregnancy, the patient was put to bed on a milk diet amounting to nearly 4 quarts a day, and estimations were made of the functional activity of the kidney in quantity of urine and urea eliminated. For a month before the confinement the patient was kept constantly in bed on the same diet. Here again it is shown that the urea relatively and absolutely diminished steadily up to the day of confinement, after which there was again a striking increase in both the total urea-nitrogen and percentage of urea. The patient was delivered without convulsions.

CASE 3.—Normal case. A normal case is charted for comparison. The patient was on full diet (Chart 3).

Two facts are shown plainly:

1. The urea diminished markedly before confinement, even in the normal case. In the other two cases it was reduced steadily for a month before pregnancy to at least one-third the normal amount and on certain days got as low as three grams. Both of these cases belong to the class of renal insufficiency with retention of urea, but both were confined without convulsive manifestations.

2. They illustrate also the fact that after periods of retention the urea is usually correspondingly increased for a time. This has been shown also in hysterical anurias, where again no convulsions follow the long-continued retention of normal end products.

These three cases will serve to show the extreme fallacy of the urea estimations as evidence of the nitrogenous elimination of the patient, for I have no doubt that the feces during these periods contained a relatively increased amount of nitrogen and the urines themselves contained nitrogenous products in increased quantity in the form of ammonia, kreatinin and uric acid, as has been shown by Folin to be the case in normal persons whenever the urea is diminished. Folin shows, further, in a patient of his that had taken extremely little food for several weeks and no food for five days before the examination he made, that in 24 hours only 125 c.c. of urine was passed, and this contained .85 grams of nitrogen, and that only 14.7 per cent. of this total nitrogen was in the form of urea and 40 per cent. of it was in the form of ammonia. Normally 80 to 85 per cent. of the total nitrogen is in the form of urea and 3 to 5 per cent. of ammonia. Folin quotes a still more interesting case from an analysis by Mörner. This urine contained only 4.4 per cent. of the total nitrogen as urea, with 26.7 per cent. as ammonia. While no particular deductions can be drawn from these cases, they serve to show that the failure of the kidney to eliminate nitrogen in the form of urea has no special significance, that it depends entirely on diet and the amount of nitrogen eliminated in other ways. In my own experiences I have the records of a case of pernicious anemia with chronic diarrhea where for months not more than 5 ounces of urine were eliminated a day, but where intestinal sand consisting of uric acid was eliminated daily in enormous quantities. This diarrhea had gone on for 20 years, and the woman died of pernicious anemia at the age of 72. So much for the influence of deficient elimination of normal end products. I have not gone into the variations in the quantity of kreatinin, ammonia and uric acid, but the conditions under which they increase and decrease in urine in other pathologic states than eclampsia, without causing convulsions, render it most probable that they have nothing to do with this state.

It has never been found that any one of them was constantly increased in the blood of eclamptic cases.

Developments in the study of metabolism brought two new theories of eclampsia in which the kidney played some part. The first was that conditions hold in eclampsia whereby normal end products of metabolism were not formed. The liver notably has attracted attention in this particular. Animals in which the Eck fistula had been produced, thus cutting off the function of the liver of destroying or converting certain toxins, died of severe intoxications. None of the known intermediary products, however, have been found to be increased in the circulation or urine, so the theory has little to support it. The second theory supposes from the analogy of B oxybutyric and diacetic acid intoxication in diabetes, which is itself due to a number of causes, that a similar production of abnormal and toxic end products occurs in eclampsia. Bearing out this theory it has been shown definitely that the blood in pregnancy is more toxic than normal, and that this toxicity is further increased in eclampsia. All attempts to show an increased toxicity to the urine have thus far been unconvincing. The source of this increased toxicity of the blood is the present point in dispute among the legion of investigators of this subject.

I will not review the subject here, but will state simply that the recent work of Schmorl, Dienst and Liepman calls attention to the fact that the placentæ of eclamptic cases are commonly pathologic; that there are large communicating spaces found in these placentæ; that thrombi of placental cells are frequently found in the maternal veins (although they are found in non-eclamptics also); that the blood of the fetus in eclampsia has a hemolytic action on the maternal blood, and, finally, that serum emulsions from dried placentæ of eclamptics produce death in animals into whom it has been injected, whereas serum from normal placentæ made in the same way is harmless.

Brettaner reports an interesting case bearing on the placental origin of the toxin. A woman of 40 who had had 3 difficult labors, was seized with convulsions without premonitory symptoms at full term. Two children were born, much asphyxiated, but they were resuscitated. The placenta was single; 6 hours later the first

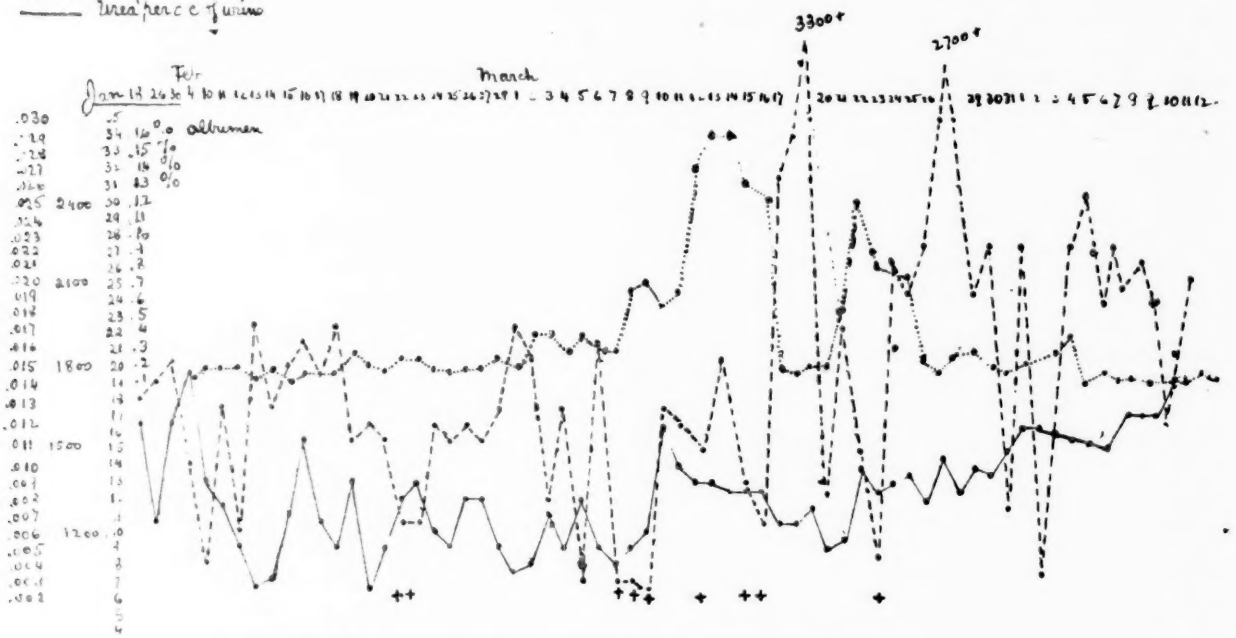

CHART 1.—PREGNANCY IN CHRONIC PARENCHYMATOUS NEPHRITIS.

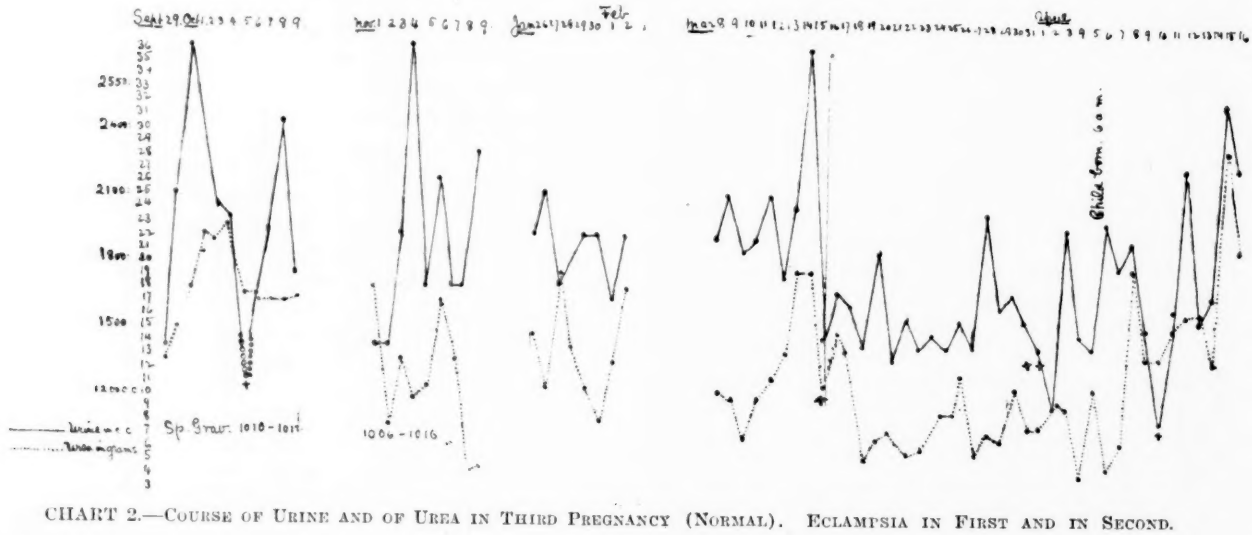

CHART 2.—COURSE OF URINE AND OF UREA IN THIRD PREGNANCY (NORMAL). ECLAMPSIA IN FIRST AND IN SECOND.

child had a convulsion, followed in the next four hours by four more. Eight hours after birth the second child had its first convulsion, and nine others followed rapidly before death ended the attacks. The mother's attacks ceased with the birth of the children.

This case led me to investigate, as far as I could, the question of the size and number of the placentæ in twin pregnancies. It may be a coincidence, but in 3 cases of twin pregnancies, where the mother and at least one child had convulsions, the placenta was single. And in 9 cases obtained from the records of Dr. Adelaide Brown, the only two cases that had no noticeable albumin in the urine during the pregnancy, were cases of double placentæ. In the other seven cases, four had a large amount of albumin, three being regarded as critical cases of the nephritis of pregnancy.

In carrying out the investigations as to whether the nervous system of pregnant women was more responsive to stimuli than non-pregnant women, it occurred to me that the experiments of Loeb on muscular irritability might be applied with some interest of pregnant animals in the hope that further light would be thrown on the question of convulsions. Loeb found that if the fresh gastrocnemius of a frog were immersed in a solution of a

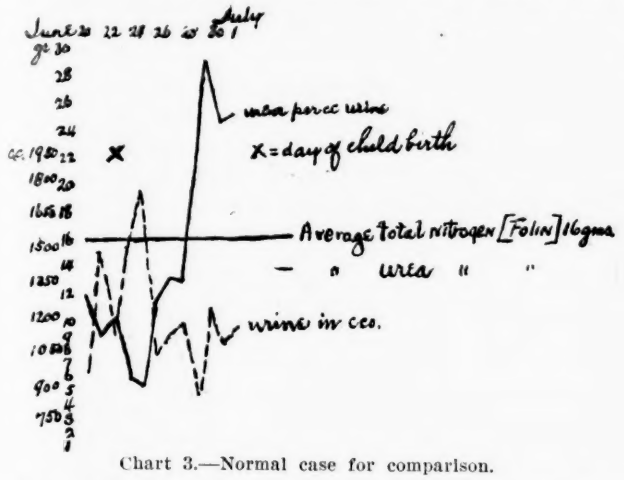

Chart 3.—Normal case for comparison.

sodium salt, the muscle will show immediate rhythmic contractions which cease when the muscle is immersed in a solution of calcium chlorid. He showed further that if the nerve alone be put into one of these salt solutions, the muscle begins to twitch in about five minutes and finally gets into tetanus. If the nerve be taken out of the solution, contractions cease. "Although this seems to indicate that the salts or other ions stimulate the nerve directly, it can be shown that they have only increased the irritability of the nerve, for when the nerve is brought in contact with any solid or liquid body the contractions of the muscles will be resumed." In furtherance of this suggestion I undertook the following experiment: An isotonic solution of sodium citrate was injected into the peritoneal cavity of pregnant and non-pregnant guinea-pigs. No convulsions were produced in either set of animals by small doses, but increasing the dose or the addition of a small quantity of barium chlorid to the sodium citrate caused immediate general convulsions in the pregnant animals and frequently death in doses that did not affect non-pregnant pigs, even of smaller size. The details of these experiments will be published later.

SUMMARY.

1. Albumin is present in fully 80 per cent. of normal pregnancies.

2. Albumin and casts are found in at least 30 per cent. of all pregnancies.

3. There is no reason to suppose that the renal condition thus revealed is the cause of eclampsia.

4. That there is some connection, however, between the albuminuria and the extra-renal cause of the eclampsia is likely, in view of the nearly constant association of the two.

5. It has been shown that neither any normal end product nor any known intermediary product of metabolism is the cause of eclampsia.

6. It is reasonable to suppose that deficient thyroid or parathyroid activity plays a part, at least, in some of the cases of eclampsia.

7. There are probably several causal factors to the separate or concomitant action of which eclampsia seems to be due.

8. The most significant experimental work done up to this time points to the fact that in the placenta are formed the toxic substances which probably are responsible for eclampsia.

9. There is good evidence that these same substances are, in all probability, the causes of the headache, edema, abdominal pain, and particularly the albuminuria present in non-eclamptic and non-nephritic cases.

10. The nervous systems of pregnant women are in an abnormally sensitive condition. Their blood has been shown to be abnormally toxic. There is no conclusive proof of an increased or diminished toxicity of the urine.

11. My own experiments have shown that the muscles of pregnant guinea-pigs can be thrown into convulsion more easily than those of non-pregnant animals.

CYLINDRURIA.*

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BALTIMORE.

(*Concluded from page 13.*)

CHRONIC INDURATIVE NEPHRITIS. RED KIDNEY. ARTERIOSCLEROTIC KIDNEY.

Of the 104 cases studied, the combined kidneys weighed above 500 grams in 12 per cent.; from 400 to 500 in 18; from 300 to 400 in 31; from 200 to 300 in 33, and below 200 in 6 per cent. It is thus seen that these kidneys averaged much larger than the white kidney just described.

Kidneys Weighing Over 300 Grams.—In 46 of these cases the nephritis formed no part of the clinical picture and was not even mentioned in the diagnosis. The average weight of these kidneys was 412 grams, the cortex measuring from 4 to 7 mm. The urine was normal in amount and specific gravity. Albumin was present but in traces, if at all; the casts were few, absent in 18 cases at times, at least, yet in 10 cases hyaline and granular and epithelial casts were abundant at times. On some days many were present. In 8 per cent. albumin was absent for a time at least. While there is a rough parallelism between casts and albumin, the former are more variable.

In 19 cases the diagnosis was nephritis. The kidneys averaged 390 grams in weight; the cortex measured

*Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

from about 4 to 8 mm.; amount and specific gravity were normal. The albumin was often of fairly large amount, even 0.4 per cent. In 9 cases there was only a trace. The casts were almost constant (yet absent at times in 4 cases), or hyaline and granular.

Kidneys Weighing from 250 to 300 Grams.—In 23 cases the symptoms of nephritis were the subordinate element, in 16 cases the predominating element. The urine was practically the same in both groups. It is interesting to note, however, that the specific gravity ran a little lower than in the preceding group. The albumin varied in amount, and casts of all varieties were present, sometimes in enormous numbers. In the first mentioned group, however, they were often few and only granular and hyaline, while in the latter group waxy and epithelial casts occurred.

Kidneys Under 250 Grams in Weight.—Of the 22 cases in this group in 14 the nephritis was unimportant, while the other 8 were acute exacerbations. The kidneys averaged about 210 grams in combined weight and the cortex measured from 3 to 5 mm. The amount of urine was in all practically normal, also its specific gravity. Albumin was present in practically all cases, usually as a trace, but sometimes a fair amount. The casts were few as a rule, but often many granular and hyaline, and sometimes waxy (in 4), epithelial (in 4), and fatty (in 1) were found. Even in the smallest kidneys the urinary condition was not very similar to that of the small white kidney.

In all these cases an interesting feature is the fact that at the beginning of their admissions or in their previous admission, even back for several years, albumin and casts were practically always present. It will be remembered that in the white variety both albumin and casts were almost a terminal event.

CASES OF CHRONIC NEPHRITIS. NO AUTOPSY.

As is easily seen from the study of cases with autopsy, the condition of the kidney can hardly be suspected from the urine alone. We shall group the following cases by their clinical features.

(1) Chronic Nephritis.—In some cases there were no acute symptoms, except perhaps a slight edema. Such are cases especially associated with advanced arteriosclerosis or cardiac disease, which dominates the clinical picture. Of 126 such cases 36 patients died. Of the 90 who left the hospital, in 70 the urine was of normal amount, specific gravity almost normal perhaps slightly lowered, varying inversely as the amount, albumin a trace, often disappearing while in the hospital. The casts were almost all hyaline and granular, and in case the albumin or the casts disappeared while under observation it was in 75 per cent. of the cases the latter. We wish to emphasize this point. In 20 per cent. of these cases more than a trace of albumin was present, and even 1 gram per mille. Very rarely epithelial blood and waxy casts were seen. There was an occasional renal epithelial cell or blood corpuscles and leucocytes found.

Of these 36 fatal cases, on admission the patients presented the following features: In 9 there was a trace of albumin and in 3 none. The casts were hyaline and granular, and in 1 case a few epithelial were found. In 3 cases without albumin or casts at first, the casts appeared later. In 10 cases there was a measurable amount of albumin, as high as 0.2 per cent. In 3 of these no casts were found; in the others granular, hyaline and sometimes epithelial were present. In 9 cases there was over 0.2 per cent. albumin, and, in addition to hyaline and granular, also waxy casts. Of these cases at death the albumin was present in 12 cases in traces. In 4 of these it had diminished toward the end. Casts were hyaline, granular or none, and in any case only a few in number. In 14 cases the albumin at death was measurable but under 0.2 per cent. It had diminished in 3 of these cases and had increased in 2. The casts were few in number, hyaline, granular and in 1 waxy: in 1 case none. In 5 cases there was a final shower of casts. At this time the casts were almost all hyaline and granular, and a rare epithelial and fatty cast. In 8 cases the albumin was over 0.2 per cent., in 1 case 0.7 per cent. The casts were present in vast numbers in 3, yet here they were almost all hyaline and granular, with a few epithelial. This lack of variety of the casts, despite their immense number, would seem to indicate that this shower was due chiefly to vasomotor changes in the kidney preceding death and not to an intensification of the nephritic process.

(2) Chronic nephritis in arteriosclerotic or cardiac cases in which the patients had acute symptoms on admission, especially edema. Of these there were 57, 13 of whom died. Of the other 44 cases, in 26 the urine was practically the same as described above, except for a polyuria of even 6 or 8 liters which often occurred during the absorption of the edema or effusion. This was well marked in 35 per cent. of these cases. In 32 per cent. there was more than a trace of albumin. This often diminished or even disappeared while the patient was in the hospital. Of the 13 fatal cases, at the onset there were traces of albumin in 2, a small but measurable amount in 1, and over 0.2 per cent. in 3. There were large numbers of hyaline and granular casts. Toward death a trace of albumin was found in 4 cases; in 2 of these it had been more. These patients had often very many casts of practically all varieties. In 5 cases with more than a trace there was less than 0.2 per cent. albumin, in some many hyaline and granular casts and in 1 case none. In these cases the casts are a subordinate feature and if numerous there are only hyaline and granular found.

AMYLOID DEGENERATION.

Amyloid degeneration may be superimposed on any form of nephritis of which it really forms no part.

In the majority of cases the condition can not be suspected from the urine alone, although given a case with history and physical signs indicating it and the urinary changes may be well explained. Disregarding the clinical features the urine would suggest on the one hand, when concentrated, chronic passive congestion; on the other, small contracted kidney.

The following is the classical description of the urine: It is increased in amount, is pale, clear, faintly acid, of low specific gravity, from 1005 to 1012, and abundant albumin as a rule, with relatively much globulin, and very few casts. This picture of Traube, however, is rare. The albumin may be little or none and the casts may be numerous. They are often fatty. Waxy casts may occur here, but are not at all distinctive. Renal epithelium is rare; red corpuscles extremely so.

Of the 18 cases of which we have notes, in 9 the nephritic symptoms were the unimportant, and in 9 they were the important features. Nine of the pairs of kidneys weighed more than 400 grams; the smallest weighed 210. The cortex varied in thickness from 6 to 9 mm. The amount of the urine presented nothing peculiar; its specific gravity in the majority of cases (9 cases) was lower than normal and in only 3 did it reach 1020.

The amount of albumin varied, in 5 cases being present but in traces, while in 7 cases there was as much as 0.8 per cent.

The casts varied almost as much; sometimes there were many, sometimes few, in 2 none. In only 2 cases were waxy casts abundant, and there were epithelial casts in but 2. In 1 case with 0.2 per cent. albumin the examinations on six days showed but one cast. In the other cases, as a rule, they were few in number. In one case with 0.9 per cent. of albumin a few hyaline and granular casts were present on some days, on other days none.

RENAL ATROPHY.

This condition may be due to insufficient blood supply, to cachexia, to the anemias, and especially to advancing age, the senile atrophy. It is never great in amount. Microscopically sclerosed glomeruli are seen, but there is no great increase in connective tissue. The urine is practically normal and without albumin.

UREMIA.

We have abstracted the histories of 96 cases of nephritis with uremia. Of the 54 cases in which the first symptom of the nephritis dated back less than six months 42 patients died. Of the 35 cases with an old history of nephritis 29 patients died. Senator states that the amount of urine is diminished or there is even anuria; rarely does this fail, and more rarely is there polyuria at the onset.

Of 8 cases of terminal uremia the albumin was increased in all. In 1 case of uremia with a trace of albumin on the day before and the day following, on the day of the convulsions there was a large amount with a great many casts.

Of our 21 non-fatal cases thus diagnosed, the urine was at the upper limit of normal in 18 and was much increased in 3 cases. The increase was at certain periods and alternated with smaller amounts. The specific gravity was not over 1010 in 10 cases. There were traces of albumin at times and periods in which none was found; hyaline and granular casts were also present.

SUPPURATIVE NEPHRITIS.

In these cases we found the ordinary symptoms of acute nephritis with albumin of varying amounts, but only a few casts. In the sediment, however, in one case there were a great many red blood cells and leucocytes. In the other cases these seem to have been very few.

ABSCESS OF THE KIDNEY.

In practically all cases there were microscopically pus cells present, although few in number. The albumin was present in but traces, and was often absent. Either no casts were found, or only a few hyaline and granular present occasionally. The reason may be the same as for the absence of albumin, viz., that for days this kidney may excrete nothing.

TUBERCULOSIS.

In all our cases of tuberculosis of the kidney of which we have notes there was a trace of albumin and a few hyaline and granular casts. On one day in one case there were enormous numbers of casts with a trace of albumin, but later the casts were fewer in number.

CONGENITAL CYSTIC KIDNEY.

The urine in this very rare condition may be normal, or may show the picture of the chronic interstitial nephritis with small, contracted kidney. The amount of urine increases and the specific gravity is low, with or without a trace of albumin; often blood cells are found. In our two cases the specific gravity was from 1007 to 1013. Albumin was present only as a trace, but terminally even as high as 1 per cent. was found. In one case, in a great many examinations, but one hyaline cast was ever found; in the other case, with 1 per cent. of albumin, no casts were found. Red blood cells and various epithelial cells were quite constant.

CANCER OF THE KIDNEY.

In 4 patients with cancer metastases in the kidney, in 1 without nephritis there was a trace of albumin, and many hyaline and granular and a few waxy casts with renal epithelium. In another case in which the right kidney was practically destroyed the specific gravity of the urine was from 1017 to 1030, a trace of albumin was present on certain days and no casts at any time. In another case, in which the left kidney was practically gone, there were neither casts nor albumin.

"SHOWERS OF CASTS."

Very interesting events are "showers of casts"; by this we mean the sudden and temporary appearance of large numbers of casts in a urine in which before and after few or none had occurred. The albumin may increase or decrease or remain practically the same.

Wagner gave as reason for pure cylindruria that the casts were formed during a transient albuminuria, remained in the tubules, and were later washed out as urinary excretion improved. This would hardly apply to cases in which a long-continued cylindruria is the important feature, and the albuminuria very transitory, but may explain some of these showers of casts which contain none but the varieties formerly present.

They occurred in 34 of our cases with autopsies, and it is interesting that 28 or 85 per cent of these were cases not diagnosed clinically as nephritis since the renal features seemed subordinate.

These cases were nearly all of slight chronic diffuse nephritis, often with scarcely any symptoms, and the sudden increase in casts meant some sudden disturbing element; perhaps a circulatory change, or the elimination of some irritating body.

The best illustration is Külz' sign of oncoming diabetic coma. Suddenly, within twenty-four hours before coma, there appears a quantity of casts in the urine, chiefly finely granular, perhaps unparalleled in clinical experience, which form a huge gross sediment filling the urine glass even one-sixth, and sometimes without albuminuria.

These casts are of characteristic appearance, with a short, broad, delicate outline, pale, and mostly granular and hyaline, with few other formed elements.[1]

There are two general varieties of this output of casts: those with the sudden appearance of large numbers of the same kind of cast as was previously present, and due perhaps to the washing out of the tubules. This follows a diuresis, due, for instance, to a salt infusion. Since the casts long in the tubules are often waxy, these may appear for the first time.

The other variety has casts of all sorts present, especially those indicating an acute exacerbation of the existing disease.

These showers of casts are usually terminal events. They may be manifestations of an acute terminal process, with increase in albumin and the other elements of an acute nephritis. This was true in 12 cases, 6 of them

1. Domanskij and Reimann: Ztschr. f. Heilk., 1901: Herrick: Amer. Jour. Med. Sc., vol. cxx, 1900.

cardiac and arteriosclerotic patients, one a case of liver cirrhosis, and three febrile cases, typhoid, pneumonia and pleurisy, and two of nephritis and uremia.

Or there may be a final increase of the casts only; this was true of 5 cases, 3 of chronic nephritis and arteriosclerosis, 1 a heart case, 1 a case of cancer.

In 6 cases in the terminal shower casts appeared then for the first time, or at least followed a cast-free period; this was true of a case of gout, in which there were small contracted kidneys, two cases of cancer of the stomach, two of tuberculosis and one of arteriosclerosis with cerebral hemorrhage.

The shower may occur during the course of the disease. Then also it may be an acute exacerbation of nephritis, as in three cases, two of arteriosclerosis, one of typhoid fever with suppurative nephritis. In a case of thoracic aneurism and one of tertiary lues, there was only a trace of albumin present.

The cylindruria may introduce an acute process and then diminish as the albumin appears; as in a case of chronic parenchymatous nephritis. Or the albumin may appear even a month later, as in a case of cancer of the stomach.

If the shower follows a diuresis to any cause, as a salt infusion, the casts probably represent the washing out of casts resting in the tubules, and in nature are similar to those previously present. In one of our cases it followed the man's rising from bed.

In three cases no casts were present immediately before nor after. One was a case of multiple renal abscess and two were cardiovascular cases.

In 25 other cases the casts were out of all proportion to the albumin, which was in some cases absent for a time or during the entire stay in the hospital; in others at most there was but a trace. The general conditions were: Typhoid, 1; pneumonia, 3; pyemia, 1; malaria, 1; sarcoma, 2; tuberculosis, 4; endocarditis, 3; dysentery, 1; cardiac disease, 4; cirrhosis of liver, 3; septicemia, 1; cerebral tumor, 1.

The renal condition was: Acute nephritis, 1; acute hemorrhagic nephritis, 2; glomerular nephritis, 1; subacute nephritis with infarcts, 1; fatty kidneys, 5; congestion, 2; cloudy swelling, 3; metastatic abscess of kidney 1; tuberculosis of kidney, 1. The others were cases of chronic diffuse nephritis; only three of these cases were clinically nephritis.

In 39 of other cases a small amount of albumin was present, but no casts or only an occasional one.

The clinical diagnosis was: Cardiac and arterial sclerosis, 6; cancer of the stomach, 4; thoracic aneurism, 1; tuberculosis, 7; cirrhosis of liver, 2; chronic diffuse nephritis, 3; leprosy, 1; acute peritonitis, 1; acute lobar pneumonia, 6; pernicious anemia, 2; septicemia, 1; congenital cystic kidney, 1; pyelonephritis, 1; typhoid, 2; diabetes mellitus, 1.

The renal diagnosis was: Chronic diffuse nephritis, 24; fatty degeneration, 7; fatty and cloudy degeneration, 1; extreme cloudy swelling, 2; subacute nephritis, 1; acute nephritis, 2; chronic passive congestion, 1; amyloid disease, 1; congenital cystic kidney, 1.

In 19 cases no casts were present and no albumin.

The clinical diagnosis was: Exophthalmic goiter, 1; Hodgkin's disease, 1; tuberculosis, 5; acute lobar pneumonia, 1; lues, 1; colitis, 1; cardiac disease, 2; acromegaly, 1; cancer of stomach, 1; chronic bronchitis, 1; diabetes mellitus, 1; hemiplegia, 1.

The renal diagnosis was: Fatty kidney, 3; cloudy swelling, 3; chronic diffuse nephritis, 9; waxy kidney, 1; chronic passive congestion, 1; arteriosclerosis, 2.

OCCURRENCE OF CASTS.

In nephritis the epithelial casts occur wherever the process is at all acute, yet they occur in other conditions not nephritis. Their occurrence suggests the statement formerly made, yet often denied, that the renal epithelium is easily desquamated, as is any mucous surface from a slight "catarrhal irritation."

The coarsely granular casts occur especially in a subacute process; never in transitory processes.

Fatty casts occur especially in conditions with fatty degeneration of the epithelium, hence especially in the large white kidney of subacute or chronic nephritis, and in our experience in malarial nephritis. They occur also in phosphorus and arsenic poisoning. These two forms of casts are of greater significance than the epithelial, yet even they may occur in simple chronic passive congestion.

Blood casts occur in large numbers in acute nephritis or acute exacerbation of a chronic nephritis; in considerable numbers in subacute nephritis, perhaps always, while even in the most chronic cases one is apt to find a hyaline cast with a blood cell attached.

Blood casts occur also in conditions not nephritis, as in circulatory changes in the kidney, after the exertion of athletes, and in cloudy swelling. They occur much oftener than they are reported. Fibrin casts are very rare, and if they occur at all it is in intense hemorrhagic processes. Pus casts (cells attached to hyaline casts) practically always may be found in any acute nephritic process. Casts composed entirely of pus cells occur chiefly in suppurative lesions; but leucocyte casts, both pure and combined, are much more numerous than suspected; some of them are called epithelial, and most are not recorded. Slight irritations of the kidney cause the output of leucocytes even more frequently than of hyaline casts, as if the first indication of irritation was pus in the urine, then hyaline casts and with them often casts with cells attached (see Gläser, also Lütke).

Waxy casts may occur in amyloid degeneration of the kidney, but not always, and are not best seen there. They are the rarest form, and occur chiefly in subacute nephritis, anywhere where coarsely granular casts occur, never in transitory conditions. In our 36 cases in which they occurred, all but three were cases of pronounced nephritis, chiefly chronic. The suggestion that these casts occur best after a considerable stasis in the tubules is relieved, that is, that they are only very condensed hyaline casts or granular casts which have undergone this metamorphosis, is borne out by the facts that we have seen the most brilliant pictures in cases after decapsulation of the kidney, also in the urine found in the bladder just at death; also that in sections the casts in closed tubules are waxy.

Finely granular casts occur in all cases of chronic nephritis, and are of much greater importance than hyaline.

The truly hyaline casts occur in any condition in which albumin might be expected, always in nephritis, and in the simplest, most transitory circulatory disturbances. They may be the only cast present in the severest form of nephritis, the chronic interstitial with uremia. No better illustration than this is necessary to show how little can be concluded from the presence of hyaline casts alone.

That great group of casts called hyaline, which resemble slightly the waxy, occurs in all forms of nephritis.

The hyaline casts occur oftenest; they may mean lit-

tle or nothing, but they are the first to appear in a pathologic process, and the only ones in some most serious conditions; therefore they must not be overlooked. If but one form of cast is present, it is always the hyaline; when two, hyaline and finely granular. Hyaline casts are always present when any are. Epithelial, coarsely granular, and fatty may occur one or all, but always with hyalines, although the latter may be rather in the background; the same is to be said for leucocyte and blood casts.

CASTS IN NEPHRITIS.

In nephritis the casts run roughly parallel to the albumin; in acute nephritis there are many, in the severe subacute form most, in the small contracted kidney fewest. In all these conditions it is not the lesion as a whole which controls the cylindruria, but rather more the acute element, hence the urinary picture is often the same in the acute exacerbations of chronic interstitial nephritis as in acute inflammation of an otherwise normal kidney; that is, the process, not the disease. The urinary picture we see in the ward is not as a rule the typical one, especially for the cylindruria of almost normal men. For these, the reports of insurance companies are much more valuable, or those of the examination boards for the Army or Navy.

When the individual is admitted to the hospital it is usually with an exaggeration of the renal condition, hence the condition is more that of an acute process which levels all cases to an almost uniform standard.

In the very acute nephritis one sees many hyaline, granular, epithelial, blood and leucocyte casts. In a case in which improvement is rapid, hyaline and granular casts are found; these diminish rapidly in number, then disappear.

If the case becomes subacute, with a large white kidney and with much degenerated epithelial cells, the hyaline, epithelial and bloody casts continue, but in less numbers, and coarsely granular, fatty and waxy casts appear. Then casts are present in greatest numbers.

If the case goes on to chronic nephritis soon hyaline and finely granular casts will be found in varying numbers, which will diminish as the case becomes still more chronic, till in the urine of a small contracted kidney will be found after long search only a few hyaline casts, and perhaps not these; yet even while few, some blood casts are seen. When the casts are absent, Bard says that the inflammatory process has ceased.

At any time an acute exacerbation may cause the appearance of all the features so far as casts go of an acute nephritis. In amyloid disease few casts are the classic feature.

From one urinary examination alone practically nothing can be learned. All the casts of acute nephritis could be found in the acute exacerbation of a chronic case; and also in conditions which are transitory and leave no scar, as some cases of cloudy swelling, fatty infiltration, and chronic passive congestion showing all the features of acute nephritis. The same is true after severe physical fatigue, as observations on athletes, bicycle riders and foot racers show; also for a few hours after an operation on the kidney.

In the diagnosis of chronic nephritis, "it is not so much the casts, their number or variety which are of as much importance as other urinary features, the specific gravity; e. g., and of greater value than this is the history of the case, and of greatest value the physical examination of the patient, the cardiovascular features, etc." (Osler).

NEPHRITIS WITHOUT CASTS.

In cases of very chronic interstitial nephritis there may be periods in which the urine is cast-free. The acute inflammatory element in the process has now ceased, but with a slight disturbance they will reappear.

In other cases of nephritis it is more probable that the casts have disappeared because of alkalinity of the urine, etc., than that they were not present.

Treutlein[2] found them constantly absent even in typical nephritis in a case of bacilluria. The *Bacterium coli* in the bladder or pelvis of the kidney can cause their disappearance in these cases.

CYLINDRURIA AND NUCLEOALBUMINURIA.

Kossler tried to establish this combination as distinct from albuminuria and cylindruria. These complexes may alternate or the former may precede or succeed the latter. It was present in his cases of "pure cylindruria," in six of which at autopsy only degenerative changes of the epithelium were found, cloudy swelling, fatty degeneration, even necrosis, but no signs of active inflammation. The nucleoalbuminuria and cylindruria of especially epithelial casts occur so parallel that they may be connected; and this might be expected, since nucleoalbumin many think is derived from degenerating cells, and the list of occurrences of nucleoalbumin are those of pure cylindruria as well.

PURE CYLINDRURIA.

To say that there are cases which, from the first, are pure cylindruria, is absurd, since clinical experience shows how temporary is the albuminuria which sometimes is followed by cylindruria; also the wide difference of opinion as to what constitutes a trace of albumin explains many cases.

Among the more acute cases may be mentioned that one reported by Müller in his study of bicycle racers, in which there were many casts, hyaline, granular and epithelial. Cases of pure cylindruria occur in cases of evidently slight irritation of the kidneys, due to foods as asparagus, radishes; to coffee, mustard; to certain drugs, as alcohol, salicylic acid; in certain diseases, especially valvular heart disease, arteriosclerosis, cancer, certain diseases of the nervous system, inflammatory diseases, acute infections. In these cases the casts are hyaline and granular, but also epithelial.

The observations made by Gläser[3] under v. Jaksch's directions are especially interesting. Normal persons from 20 to 30 years of age and not accustomed to much alcohol, and whose urine had been proved normal were given varying but considerable amounts of beer and the centrifugalized urine examined when very fresh. Of 106 persons, the leucocytes were increased in 33, and casts were present in 25. Uric acid and calcium oxalate crystals were other manifestations of the irritation of the kidney by the alcohol. No albumin (careful tests made) was present in any case. In only 6 cases was no effect at all evident.

Of the 25 persons with casts, hyaline and leucocyte casts especially were found in 9. In 7 the casts were hyaline, with a few leucocytes attached; in 2 the casts were agglomerations of leucocytes. Epithelial casts were present in 9, in 8 mixed epithelial and hyaline were present, and in 1 pure epithelial casts. A few fatty casts were found. The effect lasted about thirty-six hours. In severer cases albumin was also present.

2. Münch. Med. Wochft., 1903.
3. Deutsch. med. Wochft., 1891, p. 1193.

Lüthje[4] found that medical doses of sodium salicylate always affected the kidneys. Thirty-three individuals were examined. The administration of this drug was followed always by the presence of casts and cylindroids, leucocytes, often albumin and often epithelial and red blood cells. The effect lasted from fourteen to twenty-one days. Of 204 urine examinations made in 33 cases, in all casts were found and 96 in albumin also. Sometimes with no albumin were many casts. The casts were more especially hyaline and granular, a few leucocytes and epithelial casts were found, never any waxy casts. He thinks the condition a genuine nephritis.

Türk found pure cylindruria after administration of camphor, arsenic, mercury and tuberculin.

Casts alone are more suspicious of nephritis than is albumin alone, but in both cases it is the chronicity of their presence which is of greatest importance.

The presence of casts without albumin in nephritis is not rare if one centrifugalize the urine well.

For the past two years we have paid this point particular attention and examined all in the hospital in which this condition was present, and we find that in many cases of transient albuminuria the cylindruria will outlast the albuminuria. This is particularly true in those cases of chronic nephritis to be attributed to a parenchymatous lesion, that is, a case previously acute. In those cases of arteriosclerosis, that is, the degenerative type, we find that the reverse is more common. In cylindruria not due to nephritis the casts are rare and those found are hyaline as a rule.

In chronic interstitial nephritis there are often long periods of pure cylindruria, but the casts very scarce indeed, and chiefly hyaline, perhaps with a few finely granular. Such are the cases originally reported by Mahomet, Millard, Purdy and Gull, cases of arteriosclerotic kidneys "arteriocapillary fibroid nephritis."

A pure cylindruria sometimes occurs instead of an albuminuria under the conditions usually termed physiologic.

Stewart[5] reports a group of six or more cases of a type of nephritis which he thinks wholly distinct from the chronic interstitial form. These cases have the symptoms of marked renal insufficiency. He thinks albumin never is present, but casts always, hyaline casts especially, rarely granular, epithelial in two cases, and waxy casts in one case. The cases have not been examined as yet anatomically.

In 3 of 19 cases of erysipelas casts without albumin were found. In 38 per cent. of these cases casts or albumin, or both, were present (Pollatshek[6]). There were in one case albuminuria and casts during the six days of fever, and then pure cylindruria during the succeeding six. The other two cases presented few casts, no albumin.

In cases of eclampsia, casts alone may be present after a very slight transitory albuminuria has disappeared. Tonelli[7] reports such a case in which a woman twelve days after delivery went into sudden coma; a trace of albumin was present, then none; but very many casts, especially hyaline and granular, persisted until recovery. It is claimed that as a rule the reverse is true. Friedenberg[8] in 51 cases of postpartum albuminuria found casts in but 3. In tuberculosis pure cylindruria is not rare. Craandyk found it in 10 of 109 cases. The casts were especially hyaline, about a quarter of them granular, a few showed leucocytes and degenerated epithelial cells attached, and in about one-half the cases a few red blood cells were present as well. Kossler[9] found pure cylindruria in 18 cases of chronic tuberculosis, especially those late in the disease with evident cavity formation and a long period of hectic fever. Some at the end had cachectic edema, none symptoms of amyloid disease. The casts were few or very many and of all forms; especially hyaline and granular, almost always a few epithelial; most hyalines had these cells attached, but there were also pure epithelial casts; there were some coarsely granular casts, also some pus casts, on one or two occasions waxy casts, and in some blood casts were present during a long time even in large numbers, some of them pure; in other cases red cells were attached to hyaline casts. Cylindroids were also present. In some cases the cylindruria was very transitory.

In cases of endocarditis sometimes pure cylindruria is found.

Cylindruria accompanies constipation and diseases causing this (confirmed in animal experiments by Wallerstein). Kobler reported two such cases of chronic constipation, two of acute constipation and one of appendicitis. He considers the cause a reflex one causing vasomotor disturbance, hence nutritional disturbance of the epithelium. In other such cases the cylindruria outlasts the albumin. The same is true of various inflammatory troubles of the intestine.

One of the first illustrations given was jaundice due to any cause, which was accompanied in every intense case by albuminuria and cylindruria, or the latter alone. Nothnagel found casts always and albumin in but one-third of the cases. In diabetic coma pure cylindruria may occur.

Pure cylindruria occurs in a group of cases in which circulatory changes seem the only common element, as in valvular heart disease and arteriosclerosis, but more often with such cases is pure albuminuria.

CASTS IN NON-NEPHRITIC PROCESSES.

By non-nephritic is here meant a very temporary condition lasting but a few days or hours and with no sequelæ. The condition, of course, often may be a true nephritis.

In our cases of chronic passive congestion with autopsy, hyaline, granular, epithelial, waxy, fatty and pus casts: all gradations from a few hyalines to the picture of acute nephritis, were found; in acute congestion granular casts were found. In cloudy swelling, hyaline, granular, blood, epithelial and waxy casts were seen. In fatty kidneys, hyaline and granular casts were found. Febrile albuminuria is practically always also cylindruria. These accompany jaundice as long as it lasts; diabetes, anemia, and after the ingestion of many irritating foods. Very temporary disturbances of the kidney may present the picture of acute nephritis. These symptoms are present, with a trace of albumin, in about 50 per cent. of cases of general anesthesia for from twenty-four to forty-eight hours. Brown[10] has described some interesting cases of operations on the kidney, the urine previously normal; the operations were nephropexy or exploratory nephrotomy. On the first day following the operation, casts were present in enormous numbers. There were hyaline or granular, blood or epithelial. The field was simply crowded with them. Considerable albu-

4. Deutsch. Arch. f. klin. Med., vol. lxxvi.
5. Amer. Jour. of Med. Sc., Dec. 1893; Med. News, April 14, 1894; Lancet, Sept. 4, 1897.
6. Centralbl. f. inn. Med., No. 20, 1903.
7. Centralbl. f. inn. Med., 1898, p. 531
8. Berl. klin. Wochft., 1894, No. 4.
9. Berl. klin. Wochft., 1895, Nos. 14 and 15.
10. Johns Hopkins Hosp. Bull., May, 1900.

min was occasionally present. They diminished rapidly in number and in a few days (from two to six) had entirely disappeared. During this time there had been no symptoms of nephritis, no edema and the amount of urine was normal. The most striking feature was the disproportion between the amount of albumin and the number of casts, this being greatly in favor of the latter. There were no later symptoms.

Another very good example is eclampsia, in which the cylindruria and albuminuria are extreme, yet at autopsy (after death due to hemorrhage) the kidneys may be found apparently normal.

The postural orthostatic physiologic albuminuria is practically always accompanied by casts, if one take the trouble to search. Casts occur with albumin after the massage given the kidneys by bimanual palpation. Derring, in the urine of the oarsmen of the Harvard crew, found casts common. After a bicycle race, Müller, in the urine of 8 trained men, found in 7 albumin and casts and in 6 very many casts (these 6 including the albumin-free case). The casts were hyaline, granular and epithelial. They were gone the next day. In another group of twelve, casts were found in seven.

CASTS IN THE URINE OF NORMAL MEN.

That casts could be found in the urine of normal men has been believed by the earlier observers from the time of Henle. The finer changes in the kidney in nephritis were not then well understood, and examinations, such as made by insurance companies, were not practiced, hence these men may not have been strictly normal. Again, at that time, cylindroids were counted as casts, perhaps rightly.

As Osler has emphasized, it is rare to find a normal kidney in a man of over 50 years of age. The high strung, rapid life often shows its effect first on the kidneys and a slight increase of connective tissue, and some atrophied and sclerotic glomeruli are found. The process of senile atrophy alone, however, causes no albumin or casts, although half the renal tissue may have disappeared. It is the inflamed degenerated condition of the still-functioning epithelium.

The statement has not recently been made that casts occur in the case of normal men, and all such are considered as poor risks by insurance companies.

MEANING OF CASTS.

Casts occur wherever albumin might or does occur, but although usually associated, either one may be present without the other. It is safe to say that it is the renal cells which are at fault.

The lesion causing cylindruria may be very slight, very trivial, very temporary—some slight temporary disturbance in renal circulation; malnutrition of the cells, anemia due to any cause; the excretion of any irritating substance. Renal cells are some of the most sensitive in the body. Many think that a few hyaline casts means nothing but the most observers agree that any number, even of hyaline casts, means an irritated condition of the renal cells.

The cast may be a good index of the present state of the cell, whether merely irritated or totally destroyed, but gives absolutely no clue to the process behind that condition of the cell, whether a temporary malnutrition or an acute nephritis or a chronic nephritis with almost entire destruction of the kidney and with impending uremia. In fact, it seems as if the cells of a normal kidney could give a more vigorous demonstration of their disturbed condition by a more brilliant output of casts than could those of a diseased kidney. The latter seem to become accustomed to their condition and form even no casts.

To say that casts and albumin run roughly parallel is hardly correct, since one must distinguish between formation and elimination of casts, perhaps between elimination of the materials for casts and their formation.

Casts, however, are of much importance in following a case of nephritis or other renal disturbance.

For them to be present temporarily and then to disappear entirely means, no matter how alarming their number and variety may have been, a temporary and probably harmless disturbance; for them to continue for days, weeks, or months, no matter how few and how insignificant the onset of the trouble, means chronic nephritis; and for them to remain two years means, it is said, an incurable case.

In a case of nephritis, for the number to diminish and to include hyaline and finely granular casts means a subsidence of the acute process, while the reappearance of the epithelial, coarsely granular and bloody casts means a flare up.

That they precede albumin in certain early cases of nephritis remains to be proved. In scarlet fever, the casts may outlast the albumin, which ceases with the temperature, but in some cases from the first there seems to be only cylindruria, and this ceases with the temperature. In typhoid fever pure cylindruria is not at all rare and especially that following an albuminuria. The casts may even become more numerous after the albumin stops.

Phosphorus poisoning may produce only casts, and these in abundance, epithelial with the cells at all stages of fatty degeneration, and fatty casts. Casts also occur in acute infections of various sorts, in the cachexia due to cancer, etc., in diseases of the central nervous system, in various lung diseases, as pneumonia and severe bronchitis, in which blood casts may be the prevalent form, and in empyema.

CONCLUSION.

In the preceding pages we have given the experience of this clinic in the field of urinary diagnosis. The microscopic examination of the urine is indispensable, yet only as an aid to physical examination of the patient, for the examination of one specimen of urine will seldom be enough for a diagnosis.

In conclusion, we wish to emphasize the fact that casts alone are no index of the anatomic renal condition. Their most brilliant display is in non-nephritic condition; the most serious conditions in nephritis may be accompanied by few or none.

The more normal the cells the better do they seem to form casts when disturbed; in chronic conditions the cells seem to become accustomed to their condition and to form few casts or none.

The duration of the occurrence of casts is of great importance, and a given case may be well followed by the casts. Epithelial, blood and pus casts are more common and of less significance than is usually supposed.

DISCUSSION

ON THE SYMPOSIUM ON NEPHRITIS.*

DR. JOHN A. WITHERSPOON, Nashville, said that for a number of years he has been very much impressed with the reparative and recuperative powers of the kidneys. It has been taught, he said, that the kidneys have but little reparative or recuperative powers and yet many physicians have witnessed the disappearance or subsidence of conditions at the

* Part of this symposium appeared in THE JOURNAL last week.

bedside, and of the pathologic findings. Everything must be taken into consideration before the physician makes a positive statement, or gives a positive diagnosis. No man can depend on the clinical findings alone at the bedside. The successful man will have to rely in all his cases largely on what he finds by a comprehensive view of the entire situation. In no character of cases is this more necessary than in the consideration of kidney lesions. Dr. Witherspoon has been impressed with the fact that many men are in too big a hurry and rush through their diagnosis too rapidly. In kidney cases above all the quantity of the urine in the twenty-four hours, with repeated test microscopically and chemically of the urine in many cases will make a diagnosis. One can not jump at conclusions as is often done by the simple finding of albumin and casts. The rapidity with which some men make their diagnoses is to be censured, he said. More time should be taken in the examination of these patients. Many cases diagnosed as Bright's disease are not really that disease at all. Many prognoses would be changed if the cases were watched a sufficient length of time. In the management of the cases one should be able to recognize the danger signals even when the patient is apparently getting along comfortably. The process may be an insidious one or a stormy one, but there are certain things that should serve as danger signals, such as the uremia and evidences of cardiac changes. The heart is responsible for many of the troubles that arise with broken compensation, or when the hypertrophied left ventricle gives away. If the physician early recognized these danger signals, such as twitching of the muscles, or irregular or dilated pupils, or changes in the quality or quantity of the urine and other signs he would be able to prevent many of the subsequent dangers. Dr. Witherspoon said that medicine plays but a small part in the treatment of disease, and less in the treatment of kidney disease than in any other. In these cases success will depend chiefly on regulation of diet and on the general management.

He believes that many men have been much weakened in their vital resistance and in their muscular powers by improper dieting, resulting in malnutrition, especially such dieting as was prevalent years ago. It is horrible to contemplate. Many of these patients with chronic nephritis may live for years if they are not scared to death. He cautioned against allowing the patient to pay more attention to the taking of medicines than to the sanitary surroundings. He has had patients say to him: "I have missed taking a dose of your medicine," and he really wished that they had.

DR. W. OPHÜLS, San Francisco, stated that at the pathological laboratory of Cooper Medical College, he and his assistant have been interested in studying the relation between albuminuria and nephritis and his assistant, Dr. Wm. Osmers, has carried on a long series of investigations of the urines as a routine measure in autopsies. With the findings in the urine and the actual microscopic condition of the kidneys noted, they were compared. The investigation brought out very much the same facts as mentioned by Dr. Emerson. Their experience, Dr. Ophüls said, certainly shows that even a large amount of albumin and casts of any kind may be present in the urine and still, besides chronic passive congestion, no lesions can be recognized at autopsy, either with the naked eye or with the microscope. That is to say, in a large number of the cases the urine showed a considerable amount of albumin and casts in large numbers and all varieties, without inflammatory lesions in the kidney to account for them. This plainly shows what a difficult matter it is to distinguish between the last stages of heart disease and the last stages of kidney disease from an examination of the urine alone. They also found how difficult it sometimes is to recognize even acute kidney lesions by an examination of the urine. In chronic cases urinary analysis often revealed very little, especially in instances where but one examination was made; so that from the pathologic side it must be emphasized that an examination of the urine alone either once or when done repeatedly is not sufficient to make a proper or conclusive diagnosis of the existing conditions. So far as classifying the various types of the disease is concerned Dr. Ophüls agreed with Dr. Shattuck that physicians must adhere after all to an anatomic classification. As to just what this classification should be he is as yet in doubt. He is sure, however, that it should be based not so much on the minute histologic details but on the grosser features of the disease. A very good sign of what we may be coming to is shown by the report from the Johns Hopkins Hospital, showing that they are attempting to classify their cases of nephritis according to anatomic lesions; they have returned to the oldest anatomic classification, that we possess distinguishing between the large white kidney and the small red one.

DR. L. DUNCAN BULKLEY, New York, related his own case. in 1869 he had a very severe attack of acute nephritis. He was attacked suddenly and the urine became as black as coffee, thick and solid. He was sick a number of months and was compelled to give up his hospital work. He went to the country. Since then he has had three or four acute attacks, the most severe being eight or ten years ago, when going through the Yellowstone Park. Then the urine was black as coffee, thick and solid. For a few days he took absolutely nothing but milk and then he went to Vancouver and dieted more or less. The plan of treatment he advocates is the taking of pure warmed milk, perhaps a little diluted, one or two hours before eating. He never takes milk with his meals. From that time to this, i. e., for twenty-five years or more, during six days in the week, he consumes a quart of milk a day and takes a moderately fair diet. One goblet of milk is taken at 12:30 and three goblets after 11:30 at night. The milk should be taken between meals and at the temperature of the body so that it can be absorbed immediately and pass into the lacteals, etc. When Dr. Lambert examined Dr. Bulkley for insurance, he said that he would live fifteen years; that time has expired some time ago. Dr. Bulkley has been refused several times by life insurance companies because of the presence of so much albumin in the urine. He has had several policies granted him, however, because before going for examination he has been careful for a few days or weeks. He believes that it is of immense importance to know just what the kidneys are doing day by day, and week by week. He has a number of patients whose urines are tested day by day. He has the entire quantity of urine passed in the day examined in order that he may know the absolute quantity in ounces that is passed and which enables him to mark out the coefficient of the solid ingredients, a thing which he considers to be of more importance than knowing exactly the exact quantity of albumin. One should know exactly whether or not the patient is passing from the body in twenty-four hours his equivalent of solids.

DR. G. V. MCCASKEY, Fort Wayne, Ind., said that he thinks that those who have given the dietetic treatment of chronic nephritis careful attention are almost a unit in regard to the necessity of properly feeding these patients. Several years ago he became especially impressed with the fact that they were underfed. Patients went to him emaciated and weak from the long continued use of toast and slop diets. He then began cautiously to experiment with more substantial diets, gradually introducing liberal quantities of meat. The effects on albumin excretion, casts and the general symptomatology of the case was carefully observed, and these patients were found not only not to do worse, but to do better in every respect. It is not the color of the meat which is the proper criterion, but its digestibility. No general rules can be laid down with regard to the absolute quantity of meat to be given, but he has been in the habit of making a sort of test by giving such a patient a full meal of meat; and if the urea output goes up sharply, it proves to his satisfaction the existence of such a degree of renal capacity as will justify such a diet. He referred to the importance of paying especial attention to the gastrointestinal tract. He thinks it is not saying too much to affirm that in a large proportion of the cases of chronic nephritis, the disease is caused by toxins absorbed from the gastrointestinal tract. The therapeutic importance of this fact is obvious. In many cases the stomach and intestines should be carefully investigated by chemical and microscopic methods, and in many

the patient will be greatly benefited by suitable local treatment of the morbid conditions thus revealed. With regard to Dr. Brown's paper Dr. McCaskey does not feel convinced from the data he presents that the kidneys are not at fault in the causation of eclamptic seizures. Of course, there are many other factors, but the increased toxicity of the blood is best explained by inadequate renal function, assuming, of course, the increased formation of toxins. This does not necessarily mean organic renal disease, for the real trouble may be cardiac or vasomotor. Dr. Emerson said that in the degenerative lesions of chronic renal disease the albumin persists longer than the casts. His conclusions are based on an extensive series of cases in hospital practice. Now, if they are to be accepted, it seems to Dr. McCaskey that a logical inference is that albuminuria is a more important indication of degenerative renal disease than the presence of casts.

Of the tests for albumin, he prefers the use of the Janret reagent as the initial routine test in all cases. The formula for this is: Hydrarg. bichlor., 1.35 gms.; potassium iodid., 3.32 gms.; acid acetic, 20.00 c.c.; aquæ, 64.00 c.c. All forms of proteids respond to this test, and can be excluded at once if a negative result is obtained. If the result is positive, then other tests such as those described by Dr. Stengel can be used to determine its clinical significance. Dr. McCaskey referred to the statement in the abstract of Dr. Councilman's paper, printed in the program: "Interstitial changes in the kidney are secondary to injury of the parenchyma." He said that this statement should not pass without comment, because it tends to convey an impression which the author certainly does not intend, that interstitial nephritis is usually the result of the parenchymatous form which is not in accordance with the facts.

DR. WOODS HUTCHINSON, Portland, Ore., said that the thing we most need to-day is to get a clear conception of the fact that Bright's disease is not primarily a disease of the kidney; its causes exist outside of that organ. In many cases the kidney trouble is the localized result of a general arteriosclerosis or fibrosis, and this is usually due to the presence of toxins in the blood. We can more and more trace this as a cause of nephritis and we are less and less overlooking influenzas, summer diarrheas, ptomain-poisonings, etc., as causes. Whenever there is this toxic condition the kidneys suffer chiefly from their attempt to eliminate. He believes that the importance of albumin and casts has been greatly exaggerated. Really the amount of albumin found in the urine is an unimportant consideration. It is never a symptom of inflammation and the important question is, what is the cause of this intoxication? He believes that food has very little to do with its production and yet we have taken milk as the food in Bright's disease. Milk is an admirable food, blameless and innocent, both in the color and in its association with childhood days, yet he believes it is dangerous in nephritis because of the heavy percentage of work that is thrown on the kidneys, as von Noorden has shown, in proportion to its nutritive content, more so than by any other food. It also swarms with bacteria. In milk shakes, and milk punches the real danger is often from the milk rather than from the alcohol. Although red meat has both the color and attractiveness of sin, yet its actual nutritive value is probably more than that of any other food in proportion to the work it throws on the kidneys. With regard to any diet this must be remembered. The kidneys are there for their own benefit, as well as for ours. What we call excretion or elimination they call feeding. A nitrogenous diet is necessary for the proper nutrition of the kidney cells, and we lower their vitality, as well as that of the body generally, when we cut it off or reduce too low. Any diet that diminishes the amount of fermentation in the intestines of the patient and builds up his strength is the diet that is best fitted in cases of nephritis, regardless of whether it be proteids or carbohydrates, alcohol or milk.

DR. A. P. FRANCINE, Philadelphia, referred briefly to work being done by Dr. Joseph Walsh of the Phipps Institute of Philadelphia, in reference to nephritis occurring in those dying of pulmonary tuberculosis. In all 53 cases have been examined, both macroscopically and microscopically. The kidneys were sectioned as usual, described and then further cut up. Anything abnormal found was blocked and studied microscopically. From twelve to one hundred microscopic specimens were studied in every case. Frequent and accurate examinations of the urine were also carried on from the time the patients entered the wards. Often the urine analysis was negative, while the kidneys showed a pathologic nephritis. The findings are mainly pathologic. He referred to the more important facts. The following is a tabulated list of results: Normal, 1; congestion, no tubercles, 3; cloudy swelling, scattered tubercles, 1; toxic nephritis, no tubercles, 4; toxic nephritis, scattered tubercles, 10; parenchymatous nephritis, no tubercles, 7; parenchymatous nephritis, scattered tubercles, 8; interstitial nephritis, no tubercles, 1; interstitial nephritis, scattered tubercles, 4; diffuse nephritis, no tubercles, 2; diffuse nephritis, scattered tubercles, 6; cloudy swelling, scattered tubercles, amyloid degeneration, 1; parenchymatous nephritis, scattered tubercles, amyloid degeneration, 1; ulcerative tuberculosis of kidneys (surgical kidneys), 2; scattered tubercles, 1. Thus 34 of the cases show typical tubercles. From the above results of careful examination it may be seen that nephritis in tuberculosis is common. This occurs usually in the form of parenchymatous or toxic nephritis, though other forms are not infrequent. Normal kidneys in connection with tuberculosis are rare. Glomerulo-nephritis or hemorrhagic nephritis was never found. Tubercles were diagnosed as such, only when they showed caseation and giant cells. Thus of the above series 64 per cent., or nearly two-thirds of the cases, showed miliary tubercles. This is a new and important discovery.

DR. JAMES J. WALSH, New York, said that physicians succeed in doing something for their patients just in proportion to their early recognition of disease and the use of curative and prophylactic measures, to prevent its further progress. The reason why in recent years the death rate from tuberculosis has been so greatly reduced, is that physicians have learned to recognize the very earliest stages of the disease. Many of the patients who are now sent to sanitaria, a few years ago would have been pronounced by most physicians to have nothing serious the matter with them, so slight are the signs of tuberculosis. Indeed, at the present time, the cry of the specialist in tuberculosis is that more patients are not saved, because the family practitioner has not learned to value at their full significance the earliest signs of the affection. The same thing is true with regard to most of the diseases which the medical man has learned to turn over in recent years to the surgeon. It is because appendicitis can be recognized before it produces general peritonitis, and because gallstones and ulcers of the stomach are considered as worthy of early surgery, that the death rate from these diseases is reduced. If nephritis which has come in recent times to occupy something of the place that tuberculosis held a generation ago, could be recognized during its early stages, then undoubtedly the cure, or at least the prolongation of life with this disease, could be secured as it is in tuberculosis. The kidney symptoms of nephritis are by no means the first to manifest themselves. The urinary symptoms are only manifestations of a local change in the kidney, which has been evident, however, by symptoms from other parts of the body for some time before. It is these early symptoms of constitutional affection, that will eventually lead to the severer forms of nephritis that physicians must try to recognize. There are undoubtedly some clinical symptoms of these earlier manifestations. When the toxins that are eventually to work serious damage on the kidneys are originally absorbed from the digestive tract, they produce only a high tension pulse and a tendency to the disturbance of the heart action. This high tension pulse can be observed in the arteries, and the subjective symptoms of it a fluttering heart with a tendency to the heart beats making themselves felt during a good portion of the day, and especially during severe exertion, not infrequently bring patients to physicians before there are any urinary manifestations or at a time when the symptoms in the urine are so slight as scarcely to attract attention. There seems to

be no doubt that much of the nephritis that is seen is due to the fermentative disturbances in the intestinal tract, which disturb digestive processes. Constipation has become such a common ailment in modern times that a medical wag said not long ago that perhaps it is leading and light that our people need, but it seems more probable that laxative and licorice powder are about what they want. As the result of these intestinal disturbances, a certain amount of toxemia is not at all unusual and whenever there are symptoms that seem to point to disturbance of arterial tension and of heart action, in connection with it, the question of prophylactic treatment so as to prevent the development of nephritis should always be considered. Here is where the only hope in the medical treatment of Bright's disease seems to lie.

DR. FRANK BILLINGS, Chicago, said that our conception of nephritis may be compared with affections of other end organs of the body, especially the eye and brain. We know that the eye may be affected by local conditions or because of some general bodily defect; thus vision may be disturbed through local disease of the eye, which does not depend on any systemic condition. Vision may be disturbed through local conditions of the eye which are due to some systemic condition, and again vision may be disturbed without a disease of the eye, but because of some systemic diseases, a brain condition. If one should attempt to treat the loss of vision without a diagnosis of the causes of the disturbance, it would be irrational. So of the kidney, another end organ may be diseased locally by inflammation or degenerative changes which are manifested by albumin and casts in the urine, without any systemic disturbances. The seriousness of the condition would then depend on the degree of kidney disease. The kidney may be involved in a systemic disease as a secondary process or as a part of the general disease. The kidney may be much or little affected, the seriousness of the condition often depends on the cardiovascular status. A general disease may exist with cardiovascular changes in which the kidney may be little or not at all involved, as is evidenced by a urine that is practically free from albumin and casts and yet the individual may be as thoroughly a subject of Bright's disease as if the urine contained albumin and casts. It is the failure to recognize the diseased conditions of other organs of the body when there may be evidences of disease of the kidney, as evinced by the presence of albumin and casts, that has resulted in an uncertainty as to the management of kidney disease. Drugs may be indicated in certain of these conditions and the food indicated may be entirely different in each of the conditions named above. He said that physicians generally must agree with Dr. Shattuck in his ideas of diet in Bright's disease.

DR. JOHN H. MUSSER, Philadelphia, emphasized especially what had been said regarding the classification of nephritis, and the forms of Bright's disease. He also called attention to the importance of making a complete chemical analysis of the urine, a physiologic study, in order to lay down proper lines of dietetic management, as a study of the nitrogen output, and a study of the elements found that are secondary to putrefactive changes in the intestinal tract. The important statements made by Dr. Emerson, he said, should give rise to much reflection, and especially the statement regarding "showers." In one or two instances after the use of salt solution, in cases of interstitial nephritis, Dr. Musser had an opportunity of seeing these extraordinary showers occur. Physicians should not make a final diagnosis in obscure cases of alleged Bright's disease unless the patients are in bed a certain length of time, and the urine examined under such conditions, as well as after exercise and perhaps after various modifications of diet. Finally, he questioned the conclusions that have been drawn from an examination of the urine taken after death. At this agonal period changes occur in all secretions, even though there is no pathologic basis for them.

DR. M. H. FUSSELL, Philadelphia, sounded a note of warning. He said that it is unquestionably true that the presence of albumin and casts in cases of arteriosclerosis is simply a part of the general arteriosclerosis, and it is perfectly right that it should be so recognized. It is equally true that albumin and casts in large quantities may occur in many conditions without there being a true nephritis. If it is shown that albumin and casts occurring in the urine does not mean a nephritis, he is afraid that many general practitioners of medicine will say, "Why examine the urine at all?" It is of the greatest importance that albumin be looked for in a routine manner in much the same way as the heart, lungs and arteries are examined in every case. The presence of albumin and casts does not mean necessarily the presence of a nephritis, but they are danger signals, and if we do not examine the urine carefully, we will not be aware of their presence.

DR. L. LEROY, Nashville, said that while there is a possibility of giving too much attention, or of placing too much confidence in, urinary examinations, still the present tendency to disparage their value is not in keeping with the highest and best work, and the general practitioner is liable to go to extremes and to disregard these findings. Dr. Leroy believes that it is rather a step backward and not a step forward. The finding of albumin and casts does not necessarily mean that the kidneys are not diseased, nor does it mean that they are. He thinks that the future classification of nephritis will be, as Dr. Billings has suggested, not on the microscopic findings, not so much on the gross anatomic appearances, as on the etiology. Arriving at a prognosis in the presence of relatively small amounts of albumin and casts is one of the most difficult things and this may be a possible explanation of the work Dr. Leroy has been doing during the past two years in examining portions of the kidneys. Frequently he has found a large percentage of the kidney in good condition, whereas certain of the pyramids were in an advanced stage of degeneration. Yet there was sufficient kidney not involved to carry on the work fairly well. With regard to the treatment by diet he has found that the use of boiled meats gives the best results. Boiled meat approximately has as much nutritive value as the unboiled and the process of boiling gets rid of the extractives which are more irritating than useful.

DR. J. A. LICHTY, Pittsburg, Pa., said that it seems to him that we are coming to the turning of the way. We must look in a different direction for the basis of a diagnosis. Physicians should hold to what they have already gained during the past years and add to that some information which might come by a study of blood pressure. He is surprised that the study of blood pressure has not been taken up in this discussion. The sphygmomanometer will yield information in many cases in which the examination of the urine appears to be misleading. He mentioned two cases which he saw recently. One patient was a man 60 years old, who was thrown from a street car and sustained considerable shock, and did not recover as rapidly as Dr. Lichty thought he should. The urine appeared normal. On taking the blood pressure it was 210 and that aroused suspicions that there was more than the results of the accident to contend with. About the same time a pregnant woman consulted Dr. Lichty. Her urine contained casts and an abundance of albumin. The man had a high blood pressure, but no albumin or casts, and he grew gradually worse, and thirty or thirty-five days later he had convulsions and died. Here was an instance of a man having a nephritis and yet no albumin or casts. The woman had a blood pressure of only 110, with an abundance of albumin and casts, and went through her confinement without any suspicious symptoms; after her labor the urine was perfectly clear and she was perfectly well. These two cases show very definitely the value of the sphygmomanometer in the diagnosis of nephritis or Bright's disease. The direction of study now, Dr. Lichty believes, should be more toward blood pressure and probably the infections.

DR. ALFRED STENGEL, Philadelphia, declared that the matter of classification of nephritis has been discussed time and again, and it is apparent that no classification can be offered which will prove satisfactory from all points of view. Such working classifications as may satisfy the clinician are inadequate in a pathologic sense. He has considered only acute and

chronic nephritis (parenchymatous) and amyloid disease of the kidney, and has set apart chronic interstitial nephritis as a different sort of process. It is very important that physicians should distinguish parenchymatous disease of the kidney or ordinary Bright's disease, whether acute or chronic, from chronic interstitial nephritis. In parenchymatous Bright's disease there is a disorder of renal function which shows itself in disturbed general metabolism and disordered nutrition of varied type. For a long time at least the condition is essentially a renal affair. On the other hand, chronic interstitial nephritis usually is only secondarily and even in a terminal sense a renal condition; primarily, it is a more or less subsidiary part of the general condition, arteriosclerosis. Dr. Councilman and others have established the frequency of acute interstitial nephritis in certain infections, and reasoning from analogy one may assume that chronic interstitial nephritis might result from such a condition without the necessary existence of general arteriosclerosis. As a matter of record, however, Dr. Stengel has seen very few instances of chronic interstitial nephritis without antecedent arteriosclerosis. According to his view, chronic interstitial nephritis is for practical purposes simply a renal phase of generalized arteriosclerosis, just as in other cases one may meet with a cerebral type. It is important to recognize this because the untoward results of renal inadequacy are far distant and unlikely events in chronic interstitial nephritis as compared with the parenchymatous forms, and for this reason a differentiation must be made. He said that he thinks that Dr. McCaskey misunderstood Dr. Councilman's meaning in the abstract where he states that "interstitial change in the kidney is secondary to injury of the parenchyma." It is a dogma in pathology that all fibroid or interstitial processes have antecedent changes or degenerations in the parenchyma of the organ. There must be cellular destruction before the interstitial processes arise. Dr. Councilman's thought was this, Dr. Stengel takes it, and not what he presumes Dr. McCaskey believes, that all cases of chronic interstitial nephritis are secondary to what we recognize as chronic parenchymatous nephritis. The statement was to be interpreted in an anatomic and histologic sense rather than in this clinical way. Referring to the danger of entire frankness in the matter of pointing out the significance of albumin or of casts in the urine, he agreed that it would be deplorable if practitioners ceased to make routine examinations of the urine, because we here freely acknowledge the deceptiveness of such examinations in certain cases. So far as his own contribution to the subject is concerned he said that there is no difficulty in recognizing established nephritis when one makes repeated examinations of the urine. It is difficult, however, in cases of trivial albuminuria to assert positively whether there is a beginning Bright's disease or some transient condition. Also, it is difficult to assert with positiveness the pathologic significance of albumin and casts in the last days of life, especially when death is brought on by cardiac disease. Repeated examinations are necessary and a study of the case for a considerable period of time enables the physician to reach definite conclusions in all renal cases. Only the routine examination of the urine will lead to a proper understanding of such cases; without it the physician falls into superficial methods of diagnosis.

DR. PHILIP KING BROWN, San Francisco, said that there is no evidence at all to show that there is any intoxication due to the retention of normal end products except in cases of jaundice. He thinks that all investigators have shown that no end products, or intermediary products, have anything to do with the intoxication of eclampsia. None of these products has been found to be uniformly increased in the blood of eclamptic patients, nor has experimental injection of an excess of these products reproduced clinicaly or pathologically the condition of eclampsia. He said that he wished to correct the impression which Dr. McCaskey has, that the cases cited in which the urea was so strikingly diminished, were cases of eclampsia. They were cases of pathologic conditions of the kidneys or cases in which eclampsia had been present before, but the pregnancies during which observations were made were normal.

CANALIZATION OF THE SIGMOID, THE LATERAL AND A PORTION OF THE SUPERIOR LONGITUDINAL SINUSES FOR MASTOIDITIS

OF TWENTY-ONE YEARS' STANDING, WITH SUBSEQUENT RE-ESTABLISHMENT OF A TEMPORO-MANDIBULAR JOINT.*

BAYARD HOLMES, M.D.
CHICAGO.

INTRODUCTION.

The following case of long-standing middle ear disease, with mastoiditis, sinus thrombosis and metastatic infection in distant parts of the body, is presented as a horrible example. It occurs to me that poulticing a felon, starving a patient with appendicitis, and neglecting a mastoidectomy in antral disease represent the same stage of irrational, cowardly or villainous treatment. When we consider the number who lose their lives, the number who are crippled in hearing, and thus deprived of the advantages of social happiness and education, and, last of all, those who are partially invalided by the frequent exacerbations of the disease and its general toxemia, the indications for a prompt, adequate and effective mastoid operation become imperative. This patient has met with more of the mechanical and less of the intellectual and social ravages of this disease than many others in my experience. No criticism of the early treatment of this case is contemplated, but I would insist that a similar treatment to-day could hardly receive professional support.

NARRATION OF CASE.

History.—Miss D., the daughter of perfectly healthy parents, was born July 7, 1882. After the first few weeks she was bottle fed, but was well and perfectly nourished until the beginning of this disease. She had none of the infectious diseases and no interruption in her perfect condition until July 4, 1883, when she was a year old. While at some open-air celebration not far from home, she was taken violently ill with chills and fever, and in a few hours a swelling appeared on the right side of the face and about the ear, which some days later broke and discharged through the meatus. With some relief and frequent exacerbations and numerous perforations of the skin in front of and behind the ear, this suppuration continued for five years. The glenoid fossa was completely obliterated and the temporo-mandibular joint ankylosed. Metastatic abscesses appeared at the same time in various parts of the body, notably in the right humerus, the right leg and foot, and the left thigh. The right hip took on the symptoms of hip-joint disease, but after the discharge of pus a complete recovery followed. From some of these openings bones were discharged. There was never any pneumonia.

When she was 6 years old she was operated on in Chicago by Dr. Edmund Andrews. The mastoid was scraped away superficially, and the suppurating middle ear cleared out. Evidently the ossicles were removed. The wound healed, the external auditory meatus became completely obliterated. From time to time during the subsequent nine years abscesses appeared about the mastoid, which were usually lanced and closed up after the discharge of small pieces of bone. These attacks usually appeared in the fall.

She was greatly troubled by the immobility of the lower jaw, and when 14 years old she was anesthetized by Dr. D. W. Graham, who evidently succeeded in producing a fracture of the ramus. This healed, however, in good apposition in a few weeks.

When she was 15 years old she had a severe inflammation over the mastoid, which was followed by an inflammation an inch and a half above the junction of the sagittal and lambdoid sutures. After a time this was opened and discharged several

* Read before the Chicago Neurological Society, 1905.

ounces of pus and some pieces of bone. From this year on she had no more infections anywhere, either over the mastoid or in the extremities, until she was 19 years old. An abscess then appeared near the vertex, discharged large quantities of pus for twenty weeks, and closed spontaneously. A year later another abscess appeared at the same place, which reached enormous size. She came to Chicago and consulted Dr. N. S. Davis, Jr., who put her in Wesley Hospital and opened the abscess.

Examination.—Three weeks later, Nov. 16, 1903, she first consulted me. She gave a clear and unclouded history. During all her life she had had no mental disturbances, was always even tempered, and never suffered from headache, though she frequently had pain in the affected portions of the skull. I found a suppurating sinus near the vertex, and elicited tenderness over the upper portion of the mastoid and the squamous portion of the temporal bone. The jaw was completely fixed by the obliteration of the right glenoid cavity, and the teeth were so close together that they would not admit a knife. The only entrance to the mouth was between the right molars. The right buccinator had been greatly hypertrophied in forcing the food from this buccal cavity between the teeth into the mouth. The external auditory meatus was closed with skin almost on a level with the internal surface of the auricle. There was a considerable scar on the right temple, where an abscess had

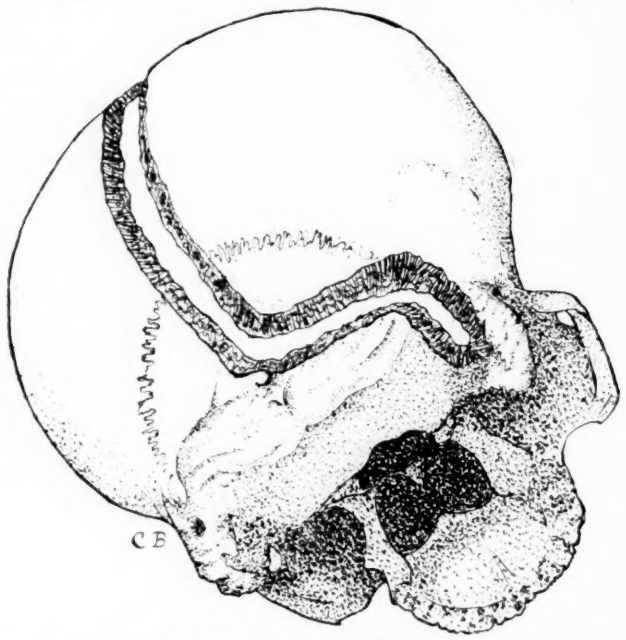

Fig. 1.—Diagram of the canalization of the sinuses showing direction and extent of the operation.

been opened and bone discharged. The neck was not stiff, and few enlarged lymph glands were found under the affected ear. Examination of the chest, the abdomen and the blood and urine gave no evidence of disease. There was no history of a typical sinus thrombosis or of any attack of pneumonia, bronchitis or nephritis.

The patient was perfectly active mentally and physically. She had a good appetite and was in excellent spirit. There was no dilatation of either pupil and no evidence of paralysis of the face, the arms or any group of muscles. The pulse was not slowed, and the respirations were full and active, and headache was entirely denied.

First Operation.—From the clinical history and the physical examination, I concluded that the mastoiditis of five or six years ago had produced a sinus thrombosis, with obliteration of the sigmoid, the lateral and a part of the superior longitudinal sinuses, and the discharge of the infection above the lambda. I believed that the proper treatment would consist in an obliteration of the sigmoid, the lateral and the superior longitudinal sinuses by canalization (Figs. 1 and 2) and by the complete eradication of all suppuration in the antrum, if left behind, and in the attic and the air cells in the root of the zygoma. Accordingly, with chloroform anesthesia, an operation was undertaken as if to approach the antrum. This was found undisturbed and full of pus and connected by a defect in the tegmen with an abscess of great size in the middle fossa. This abscess was opened an inch behind and an inch above the middle of the external auditory meatus, and discharged such an enormous quantity of pus that further operating was discontinued in alarm. The abscess was extradural; the pus was of a dark-gray color, and not less than four ounces drained out during the operation and before the dressings were applied. It seemed impossible that such an enormous quantity of pus could be harbored in a skull with a perfectly functionating brain. The patient came out of the anesthesia without any trouble and did perfectly well.

Second Operation.—After two weeks a second attempt was made to eradicate the suppuration. The mastoidectomy was completed and the external auditory meatus opened to the bottom of the antrum. No evidence of the facial nerve was discovered at this time. There was scanty and much cicatrized skin in the neighborhood of the mastoid with which to close in the defect. The scalp was opened from the mastoid to the suppurating focus on the top of the head, and a channel of bone about 1 cm. wide at the bottom and something more than this at the top was chiseled out through both tables of the skull, laying bare the bottom of the sigmoid sinus, the lateral sinus and a portion of the superior longitudinal sinus. These channels were found covered with exuberant granulations. Nearly all of the pus had drained away during the two weeks' intermission. The patient endured the anesthetic splendidly. This operation was performed on December 4, and during the following three weeks she did well, the suppuration diminished, and the bone became rapidly covered with skin or granulations, but soon after Christmas the temperature suddenly rose, and an erysipelas spread from the neighborhood of the mastoid

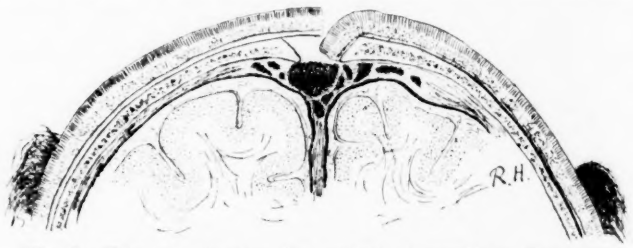

Fig. 2.—Diagram showing the method of canalizing the superior longitudinal sinus. One flap of scalp is turned in over the skull. The other will be held down in the same manner by the gauze.

over the face and scalp. This lasted several days and disappeared.

Third Operation.—On Jan. 22, 1904, a third operation was performed to remove the granulations from the bottom of the wound, which extended from the lambda to the mastoid, and to close a large defect over the mastoid which had resulted from the inadequate supply of scalp. The defect was divided with a peninsula of skin. No osteal evidement was necessary. Following this operation the epidermization of the wound was rapid, and the patient left the hospital on March 1 without any large dressing. The only ulcer was over the mastoid. During the succeeding year and a half there were a number of slight attacks of pain with inflammation in the external auditory meatus, which subsided after a few days by the discharge of a little pus.

Fourth Operation.—She consulted me on Oct. 28, 1905, on account of such a suppuration, which appeared to be in the root of the zygoma, but very superficial and trifling. She also spoke of the possibility of restoring the function of the articulation between the mandible and the temporal bone. I found the jaw fixed, as it had been since she was a year old, but believed that the articulation on the opposite side of the jaw was perfect, and that the internal ligaments of the jaw between the lingula and the spinosa were intact. It seemed possible to separate the ear from above downward from the bony meatus without danger of anemic necrosis (Fig. 3) and thus approach the obliterated glenoid fossa by retracting the parotid forward and baring the lateral surface of the obliterated articulation. Thus it would be possible to eradicate the infection at the root of the zygoma and remove enough bone about the condyle of

the mandible to restore the joint. I had the assistance and advice of Dr. Charles P. Pruyn in this matter, who was extremely guarded in his prognosis, fearing the incompetency of the joint ligaments. This operation was undertaken Nov. 3, 1905, with gas and ether anesthesia. Without ligating any large blood vessel, the lateral aspect of the temporo-mandibular articulation was laid bare, the parotid and its contained branches of the facial nerve were retracted ventralward and downward, and the auricle, which was separated from the bony meatus, was retracted downward and backward. The outline of the joint was made out and found to be rather broader than normal on account of the adventitious growth of bone. An artificially curved condyle was then marked out with the chisel and the necessary bone in the zygoma and the glenoid fossa chiseled away. It required nearly 2 mm. of channel for the use of the chisels, and no cartilage was discovered in the course of the excavation. No accident occurred. The bone was somewhat eburnated, and showed no trace of infection except in the root of the zygoma, where it was expected. The mouth was not opened into from the operation wound. When the ankylosis had been entirely chiseled away, the jaw was movable, showing no ankylosis on the opposite side. The anesthetist was able to introduce the width of two fingers between the incisors. This was considered adequate. In order to

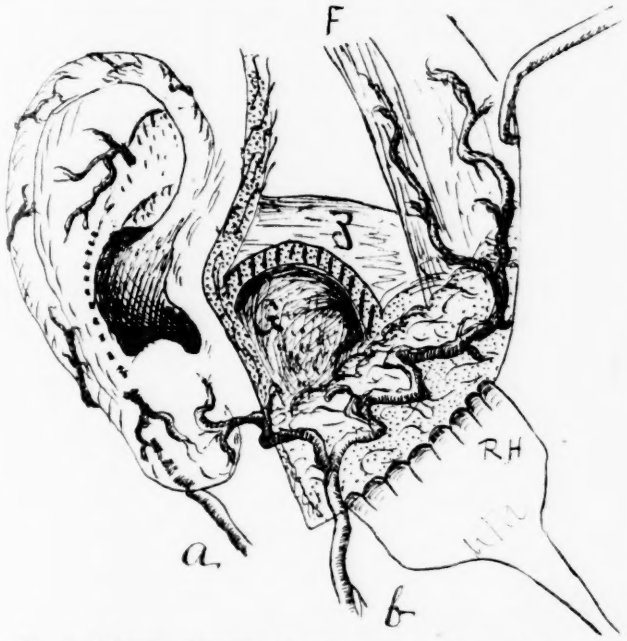

Fig. 3.—Diagram showing the blood supply (a, b) of the auricle after a complete mastoidectomy. The artificial articulation between the zygoma (z) and the mandible (G) under the retracted parotid is shown. A strip of fascia (F) and muscle taken down was turned into the new-made joint.

establish a permanent separation between the mandible and the temporal bone, the incision was extended upward somewhat, and a piece of fascia belonging to the temporal muscle was cut away, making a flap about 1 cm. wide and 4 cm. long. It contained an abundant blood supply in the bits of muscle attached to it. This flap was carefully drawn into the artificial articulation and held in place by the natural apposition of the bones. The wound was now closed, with a liberal drain in the immediate neighborhood of the artificial joint and dorsalward of the parotid.

Postoperative History.—Since the operation the patient has done well; there has been a discharge of parotid secretion and some pus from the wound, but there has been no disturbance of temperature. On first waking from the anesthesia, the patient discovered that she could, for the first time, protrude her tongue far enough to see it, and she exercised this newly acquired maneuver until the tongue was sore. The articulation has not been painful at any time, and voluntary movements are satisfactory. The teeth are so defective and sore that chewing is somewhat painful, but she greatly enjoys it. The jaw can now be voluntarily opened so that she can introduce her thumb without force to the metacarpal joint. Forcible extension of the jaw produces as much pain on the left as on the right side.

SUMMARY.

To summarize the accomplishments of the treatment I have instituted, I would call attention to the presumptive diagnosis of a sigmoid sinus, a lateral sinus and a superior longitudinal sinus thrombosis. So unusual a condition could not be premised as an accompanying extradural abscess of enormous size, probably containing not less than six or eight ounces of pus. The lack of pain and symptoms of sepsis would ordinarily deny the diagnosis.

The complete evidement of the antrum and its connecting air cells was the prerequisite to any effective treatment, and the alarming discharge of pus through the antrum and afterward through the opening in the squamosa constrained me to await the shrinking of the abscess cavity and the diminution of the field of operation to the sinuses alone.

At the second operation the external auditory meatus was restored in the hope of bringing the middle ear to some use. A communication was made between the bottom of the antrum and the internal wall of the tympanum. The sigmoid was opened immediately behind the mastoid, and the channel which the probe discovered leading toward the occiput was completely canalized. A few bits of infected bone were removed mechanically, which would have required months or years to be carried away in the discharges.

The temporo-mandibular joint has, I believe, been permanently restored and the function of the jaws for the first time made possible. The teeth can be treated now and kept for some time for mastication and for cosmetic purposes.

The patient has been relieved of the dangers of a chronic pyogenic function.

HYPEREMESIS GRAVIDARUM.*

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By this term is usually meant that aggravated uncontrollable form of vomiting of pregnancy which resists local as well as constitutional treatment, and which so reduces the patient's vitality that it very seriously endangers her life. Occasionally, deaths directly due to this cause have been reported, so that a very serious and difficult problem confronts the physician who has charge of such a case. A large number of these patients abort as the result of the irritation of the uterus caused by the violent fits of retching and vomiting; this relieves by removing the source of the irritation.

The lives of a number of these patients may be maintained for a time by rectal alimentation, but, unfortunately, by many this mode of feeding is not borne very well, especially if it must be kept up for a long time. Realizing, however, that the vomiting of pregnancy usually abates toward the end of the third or the beginning of the fourth month, the physician's aim should be to sustain the patient until this time shall have been reached. This can be done in some cases, but will fail in others. The patient may waste away and lose strength, retaining no food at any time of the day or night, either by mouth or rectum, despite the faithful

* Read before the Omaha-Douglas County Medical Association, 1905.

use of such remedies as cocain, oxalate of cerium, carbolic acid, essence of pepsin, lime-juice and pepsin and a host of others, which occasionally give relief in the milder form of vomiting.

In some cases in which malpositions of the uterus have been found and rectified, the condition has been ameliorated so that the patient's life could be sustained until the time when things naturally mend, or until such a period as would render possible the induction of premature birth with some chance of survival of the child.

In some instances local application to the cervix of carbolic acid or nitrate of silver or local electrolysis to the cervical canal with a mild current have succeeded in ameliorating the condition and rendering it tolerable.

Where these have failed, some have advised and even carried out instrumental dilation of the os. This is a *remedium anceps,* in that it is liable to be attended by partial separation of the ovum and to be followed by abortion. Particularly is this the case when the dilator is inserted too high and the membranes are ruptured. The emptying of the uterus usually relieves the vomiting, but by so doing in the first six months the life of the fetus is sacrificed, a procedure not justifiable except when, as a last resort, it is carried out to save the mother's life after all other methods of treatment have failed.

The vomiting of pregnancy being a reflex symptom of the uterine disturbances incident to pregnancy, its degree of intensity depends on the severity of the local pathologic conditions, together with the sensitiveness of the nervous system.

It is more severe, therefore, in patients with extremely nervous temperament, and particularly so in those with pronounced pathologic conditions about the uterus. Endometritis, malpositions and lacerations are the local conditions most frequently aggravating the ordinary mild vomiting of pregnancy, and their appropriate treatment will usually relieve the vomiting, if not entirely, at least sufficiently to make the condition tolerable. It is not my intention to dwell minutely on th various therapeutic measures applicable in these cases. I simply desire to call attention to these conditions that in any given case they may be looked for, and, if found, corrected.

It is to be presumed that the physician in examining such a patient will eliminate all other possible sources of uncontrollable vomiting, such as incarcerated hernia, intussusception, pyloric stenosis, cancer or ulcer of the stomach, kidney disease, brain disease or appendicitis, arriving by exclusion at the proper diagnosis corroborated by the results of local examination.

Many physicians treat this vomiting in a routine manner without paying due regard to the conditions underlying or aggravating it.

When no local disease or malposition is found, in other words, in a simple case of vomiting of pregnancy, I usually advise my patient to stay in bed at least an hour after breakfast, and prescribe ingluvin, 10 grains before and after each meal. The recumbent posture, with restriction of the morning meal, and some pepsin compound is all that is necessary to control the milder forms of vomiting of pregnancy. In the more severe forms usually, but not always, some pathologic condition, such as already indicated, will be found, which, if rectified, will lead to satisfactory results. At the Nashville session of the American Medical Association a physician from Ohio related the details of a case in which, after everything he and others could think of had been tried without success, it was decided to empty the uterus in order to save the patient's life. Electricity was used, and the applications were made at regular intervals, either daily or on alternate days. The author reported the effects of each application in about the following language: "After the first two applications there was no perceptible effect. After the third application there was some amelioration of the symptoms. After the fourth application the vomiting ceased. After the fifth application pains began and after the sixth application the fetus was expelled."

I criticised him for having made the fifth and sixth applications of electricity, thereby causing the expulsion of the fetus, when the fourth application, by relieving the vomiting removed the excuse for the abortion.

In this connection I wish to report a case which occurred in my practice three years ago, and which aptly illustrates the point I made in the above criticism.

Patient.—Mrs. ——, aged 39, mother of three children, called me in February, 1902, on account of persistent and violent vomiting. She had missed her last menstrual period and thought herself about six weeks pregnant.

Examination.—This proved her suspicions to be correct, and showed a lacerated, displaced cervix, with normal position of uterus. The bowels and kidneys were normal, as was also every other possible source of trouble.

Treatment.—Ingluvin was given before and after meals, absolute rest in bed was insisted on, and a diet of milk and broths was ordered. This being of no avail, phenolated essence of pepsin with bismuth and hydrocyanic acid were given, with like result. The cervical canal was treated with carbolic acid and iodin, and a glycerin tampon applied. Feeding by the mouth was stopped and rectal alimentation resorted to. The vomiting still continued without abatement and with evidences of increasing debility. At this stage I was unavoidably detained at home by sickness for a week, during which time she was in the care of two other reputable physicians, one of whom tried to relieve her by dilating the os. Her condition did not improve, the vomiting continued and when I returned I found her extremely emaciated, losing flesh and strength rapidly, vomiting blood and mucus and with her teeth loose, gums raw, sore and bleeding, her mouth emitting a fetid odor. Inquiry elicited the fact that neither of the physicians had given any mercurial preparation, so that this condition of the mouth must be interpreted as an aggravated form of the salivation so often attending the earlier months of pregnancy, just as the vomiting was an aggravated form of the emesis ordinarily occurring in this condition.

Things had come to a pass where something radical had to be done to save the patient's life, so with her and her husband's consent, reluctantly given, I proceeded under anesthesia and with strict asepsis to dilate the os thoroughly; I introduced a bougie into the uterus up to the fundus and left it there. The vagina was packed with iodoform gauze and the patient left quietly in bed. Within two hours pains began and continued for about thirty-six hours; as no hemorrhage occurred and the temperature remained normal, I left the bougie in the uterus for forty-eight hours. During this time the vomiting had ceased and when I removed the vaginal tampon I found nothing had been expelled from the uterus. I now carefully removed the bougie and again reassured myself by careful examination of the presence of pregnancy. The vomiting having ceased, I told my patient that I would desist from all further attempts to empty the uterus and would now try to save the child as well as the mother. I gave a uterine sedative, kept the woman in bed for ten days, and began a process of feeding. She retained the food, the vomiting did not recur, and as soon as the gums were restored to a good condition by appropriate local treatment she began taking solid food. The further course of the case was uneventful and on Oct. 4, 1902, I had the pleasure and satisfaction of delivering the patient in an easy labor of a healthy, living child, which to-day, three years later, is hale and hearty.

What I want to emphasize is the fact illustrated by the

two cases cited above, that when in pregnancy, for just and lawful reasons, the emptying of the uterus is resorted to, and during the operation improvement in the fundamental conditions supplying the excuse for the abortion occurs, it is the duty of the physician, if not too late, to cease in his attempt to cause abortion, and to make all efforts to save the child as well as the mother.

This could probably have been done in the first case cited, but evidently it was not thought of.

THE OPERATIVE TREATMENT OF FRACTURES.

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In no class of surgical cases is there demanded the mechanical skill, the anatomic knowledge and the perseverance that is required in the treatment of fractures. It has, at all times, received close attention and careful study; yet it is perfectly evident, from the great number of cases which so frequently tax our ability to the utmost, and are followed not only by unsightly deformities, but by poor functional results, that a decided change from the heretofore conservative methods of treatment is necessary in many cases if perfect approximation of the fractured ends of the bone and good functional results are desired.

Since the introduction of the *x*-ray as a means of diagnosis, the difficulty of complete reduction and perfect approximation of the fragments is shown, and masses of bone, which were formerly termed "exuberant callus," prove to be due to the displacement of the fractured ends and comminution of the fragments at the seat of fracture.

In a great number of cases the desired result—complete reduction and perfect approximation—can be obtained by only one means, the direct replacement and fixation by operative methods. The treatment of fractures by open operation is one of the many advances that has been made in recent years. It is only within the past decade that surgeons have realized that dissolution in continuity of bone can be treated in the same manner as dissolution in continuity of other structures; that is, by direct restoration and perfect coaptation of the parts; and that operations on the osseous system can be performed with as great a degree of safety as in operations involving the soft parts. Many authorities are inclined to object to the advisability of operating on closed fractures. They consider that in all cases good functional results can be obtained by position and fixation in splints after proper reduction, and that the converting of a closed fracture into an open one is not only unnecessary, but in most cases dangerous, on account of the risk of sepsis taking place. There is a growing tendency, however, among surgeons of the present day to operate on many cases of closed fractures which can not be perfectly reduced, or which, when reduced, fail to remain so, as shown by the *x*-ray photograph, and these men have from time to time reported their results.

It is with the laudable object of adding to the literature of the subject that the present paper is presented to the medical profession. While the operative treatment of closed fractures was the primary incentive for writing this paper, the operative treatment of open fractures, ununited fractures, etc., will be considered.

Through the courtesy of Drs. Bolles, Cushing, Monks, and Lund of the Boston City Hospital, and Dr. H. C. Deaver of St. Mary's Hospital, Philadelphia, I have been afforded the permission to report the series of cases on which this article is based. I observed the cases while house surgeon at the two above-mentioned institutions. The series consists of 23 cases, the nature of the fractures being as follows: Closed fractures, 8 cases; open fractures, 12 cases; ununited fractures, 2 cases; and deformity following fractures, 2 cases.

In the operative treatment of fractures the subject may be classified as follows:

I. The Operative Treatment of Closed Fractures.
II. The Operative Treatment of Open Fractures.
III. The Operative Treatment of Ununited Fractures.
IV. The Operative Treatment of Separated Epiphysis and Fractures Associated with Dislocations.
V. The Operative Treatment of Deformities Following Fractures.

I. THE OPERATIVE TREATMENT OF CLOSED FRACTURES.

Until recent years the only method of treatment of closed fractures was the employment of external dressings, as splints, plaster-of-paris casts and bandages, etc., with and without traction, with the object in view of approximating the fractured ends of the bone, correcting displacements and holding in place fragments which tend to unite with deformity. While in general, many cases recovered with good anatomic and perfect functional results, in other cases the subsequent deformity, the failure to obtain union and the frequent loss of function show only too well that perfect results can not be obtained at all times by conservative measures. The constant use of the *x*-ray and examination under anesthesia show that in many cases proper reduction can not be obtained and the fractured ends held in perfect approximation by the ordinary methods of external fixation.

The perfection of surgical technic and wound asepsis has produced extremely rapid progress in all branches of surgery since the introduction of Lister's method of antisepsis. Their results are strikingly seen in the great reduction of mortality following the antiseptic methods in the treatment of compound fractures and the comparatively little risk in all operations on bones, as osteotomy, resection, etc. Since it is now possible to operate almost always without wound infection, closed fractures may be operated on with as little risk as operations on other parts of the body.

Scudder's statistics on the results obtained in the non-operative treatment of fractures are interesting. They are based on the observation of cases, three to five years after injury, treated at the Massachusetts General Hospital. In fractures of the hip, the results were poor in 81 per cent. In fractures of the thigh, perfect functional results were obtained in children; in adults, 31 per cent. were perfect, and 69 per cent. imperfect, and in old age none was perfect. In fractures of the leg, poor results were obtained in 60 per cent. of closed fractures, and poor results in 79 per cent. of compound fractures. Since the introduction of aseptic methods of treatment of compound fractures, the mortality has fallen from 68 per cent. to 2 or 3 per cent. at the present time.

Senn states that "the adoption of rigid antiseptic precautions in the treatment of compound fractures has reduced the mortality from 50 to 70 per cent. almost to *nil*, and the same has rendered operations for ununited fractures nearly devoid of danger."

The financial depreciation of the patient is to be considered in the treatment of fractures, especially those of the lower extremity. Mr. Lane considers that the financial depreciation of the laborer as a mechanic amounted in fractures of the tibia and fibula to nearly as much as 70 per cent. of his original value, when treated by non-operative methods. This he ascribed as being due to alterations in the line of pressure through the several joints of the lower extremity, resulting from the somewhat complicated deflection of the lower fragments from their original relationship to the upper. Mr. Lane argues that to pursue the present mode of treatment was highly improper, since by operative measures, entailing a minimum of risk to the patient, the fragments could be brought into apposition and so retained with perfect accuracy, with the result that the skeletal mechanics of the individual remain as perfect after the injury as before.

While it is true that there are many surgeons who entirely condemn the operative treatment of closed fractures, it is an undeniable fact that there are many surgeons, and their numbers are increasing, who consider this method justifiable in all complicated fractures, and in many fractures in which perfect reduction and approximation can not be obtained. Golding-Bird states that "the merit of the operative interference in closed fractures does not stand on any different footing from that of other surgical procedures; its value should be assessed, not by one fact only, but by all those results of its employment taken together, which tend for the good of the patient and the complete reduction of the fracture, which must and can alone determine the right course to adopt."

The results desired in the treatment of all fractures are: (1) The perfect reduction, approximation and retention of the fractured ends of the bone; (2) the prevention of subsequent deformity; (3) the retention of perfect alignment of the fragments; (4) the prevention of "exuberant callus"; and (5) the prevention of non-union and pseudarthrosis.

Many conditions prevent the accurate adjustment of the fragments in fractures of the long bones. These not only prevent reduction, but are often the cause of deformity, delayed union, non-union, neuritis, paralysis, muscular atrophy, loss of function and impairment of the general health. The most frequent obstacles to the complete reduction of the fractured ends and their permanent retention are: (1) The interposition of soft parts, as muscles, nerves, blood vessels and fascia; (2) the retraction of normally stretched tissues which after fracture have no resistance offered to them; (3) the piercing of adjacent muscles and fascia by the sharp ends of the broken bones; (4) the displacement and interposition of comminuted fragments; and (5) hemorrhage into and inflammation of the soft parts. This last condition has always been greatly underestimated. Mr. Lane states that "the bruised and lacerated soft parts are infiltrated, often very extensively, with blood, and are in a condition of very considerable inflammation and tension. The fragments of bone can not be placed or retained in accurate apposition by any process of manipulation or of extension, or of fixation in splints, casings, etc. We have had enough experience now to know that, providing the fragments have become displaced from one another, whether the fracture be spiral, transverse or oblique in direction, the amount of displacement, overlapping or alteration of the axes of fragments on one another varies with the hemorrhage into and swelling of the lacerated soft parts which surround the bone or bones. We also know that if these soft parts are allowed to remain in their shortened condition for any length of time, the amount of force required to restore them to their original length is necessarily very great, and varies directly with the length of the interval following the fracture.

CLOSED FRACTURES MOST SUITABLE FOR OPERATIVE INTERFERENCE.

While it is not advisable or necessary to operate on all closed fractures, yet there are certain bones which, when fractured, generally demand operative interference if we would obtain the best anatomic and functional results. Many authorities still maintain that no closed fracture should be converted into an open one, but there are some fractures in which even the most conservative surgeons will admit that were it not for the danger of sepsis intervening, better functional results could be obtained by operation. Among such may be mentioned the following: (1) Fractures of the neck of the femur in patients under 50 years; (2) supracondyloid fractures of the femur; (3) fractures of the patella; (4) spiral and oblique fractures of the tibia, either alone or in combination with fractures of the fibula; (5) fractures of the clavicle, with marked displacement; (6) fractures of the upper end and of the condyles of the humerus; (7) fractures of the olecranon, with marked separation of the fragments; (8) fractures of the middle of the radius; (9) fractures of the spine and skull. In all cases in which marked comminution of the fragments is present and when reduction is impossible, in oblique and spiral fractures of the bones of the extremities, operative intervention is justified. Many of the deformities, pseudarthrosis and loss of function seen to follow fractures, will thus, in most cases, be obviated. The unsightly deformities which so seriously destroy the usefulness of the part and predispose to refracture will be prevented. Fractures complicated by severe injury to adjacent structures urgently demand operation. Under this heading may be included fractures, in which pressure is brought to bear on neighboring viscera, nerves and blood vessels, fractures associated with dislocations, and fractures involving joints.

Not only does non-union often result from misplaced fragments, but excessive callus formation is bound to occur. Nerves and blood vessels are liable to be involved in this excessive attempt of nature to repair the loss of bony continuity, and involvement of such structures is seen in the frequent neuritis and edema of the parts following malunion. When this excessive callus is formed at the seat of fractures involving joints, impairment and at times total loss of function is the result. Excessive callus is formed only when perfect approximation of the fragments is not obtained.

ADVANTAGES AND DISADVANTAGES OF THE OPERATIVE TREATMENT OF CLOSED FRACTURES.

Compared with the dangers of sepsis, which is the chief argument against operation, the advantages to be obtained by the surgical intervention in closed fractures are manifold. They may be enumerated as follows: (1) The patient is at once relieved from any pain which might be caused by the movement of one fragment on another; and of the discomfort due to tension, caused by the extravasated blood. (2) Accurate approximation and retention of the fractured ends is possible by means of instruments and appropriate methods of internal and external fixation. (3) Shortening and de-

formity are prevented. (4) Clots of blood and detached fragments of bone may be removed and neighboring structures repaired. (5) Excessive callus formation is prevented by accurate approximation, and in fractures involving joints subsequent limitation of motion and deformity are prevented. (6) Pressure on neighboring structures is removed. (7) Associated dislocations may be properly reduced. (8) The period of disability is considerably lessened, as union is practically by first intention, and consequently very rapid and perfect. (9) The skeletal mechanics of the patient are left in the condition in which they were before the injury.

The disadvantages of the operative treatment of closed fractures are: (1) The liability of infection; (2) the danger of necrosis of the fractured ends; (3) the presence of a skin scar.

These disadvantages, however, are outweighed by the advantages, and in all cases in which complete reduction, perfect approximation and retention can not be obtained by conservative means, when complications exist, and when the preservation of the skeletal mechanics, especially in laborers, is an important factor, there should be no hesitancy in converting a closed fracture into an open one, for the patient's good.

TIME OF THE OPERATION.

In certain varieties of fractures in which it is known from experience that perfect reduction and retention can not be obtained by conservative means, as in spiral and oblique fractures of the middle and lower third of the tibia, it is advisable, after the preliminary *x*-ray photograph has been taken, to operate immediately after the injury, providing the patient has suffered no shock at the time of the accident. By so doing, reduction will more easily be accomplished, the edema of the soft parts will be avoided, the formation of fibrous tissue between the fractured ends and contraction of the soft parts will be prevented, approximation of the fractured ends can be accomplished without the necessity of resection and consequent shortening, and healing by first intention will be the rule. Some authorities prefer to wait for a week or ten days before operating, until the effused blood has been absorbed. By so doing, they claim that the risk of infection is reduced to a minimum.

TECHNIC OF THE OPERATION.

There are many methods of internal fixation of the fractured ends of the bone in use by various surgeons. The technic of exposing the fragments is practically the same in all cases, minor changes being required to suit the individual case. In some cases internal suture of the fragments is unnecessary, while in other cases permanent complete reduction and perfect approximation can not be obtained without some method of internal fixation. Two classes of cases will therefore be described:

1. *Repair Without Internal Fixation.*—In this class are included: (*a*) Fractures in which reduction is prevented by the interposition of soft parts between the fractured ends of the bone. (*b*) Fractures in which there is irregularity of the fractured ends, so that, when the fragments are brought into apposition they become locked. (*c*) Fractures in which apposition can readily be maintained by external splinting after reduction has been accomplished. The best example of this class is a dentated supracondyloid fracture of the femur. (Case 1.)

The skin for a considerable distance above and below the seat of the fracture should be carefully cleaned with soap and water and the hair removed. The part is again cleaned with tincture of green soap and sterile water, and then with 70 per cent. alcohol. Exsanguination by means of a tourniquet or an Esmarch bandage is not advisable. While its advantages are considerable during the operation by giving a bloodless field, subsequent bleeding from large and moderate-sized vessels is not recognized, and is liable to promote wound infection, not only on account of the blood clot which forms, but by the inevitable formation of a small sinus along which infection may travel from the surface. All bleeding should be controlled as it arises. The incision through the skin and superficial fascia should be sufficiently large to permit of thorough inspection and to allow of protrusion of the fractured ends through the wound, if necessary. The muscles should be separated in their intermuscular planes, when possible, and if not, in a direction parallel to the course of their fibers. Nerves and blood vessels should be carefully avoided. On reaching the periosteum, it will be found to be separated to a variable extent, and at times torn completely across. If the periosteum is not torn, it should be divided longitudinally, and the seat of the fracture exposed by retracting its edges. All bleeding should be controlled, and any blood clot present should be removed by means of dry sponges. Intervening structures should be carefully disengaged from the rough edges of the fragments and placed in their normal relations, suturing torn structures with fine catgut, if necessary. Detached fragments of bone should be removed. If the operation is performed shortly after the injury, it will be found possible by extension and manipulation to bring the fractured ends into approximation and lock them together without resecting the fractured ends. If this is possible, an assistant should hold the part in its normal position from this stage until the operation is completed and the external splints have been applied. Irrigation of any kind is not advisable, as all irrigating solutions tend to lower the vitality of the tissues. Blood clots can best be removed by dry gauze sponges. The edges of the periosteum, the muscular layers and subcutaneous tissues should be united by interrupted or continuous layers of fine catgut, and the skin by interrupted or subcuticular horsehair or silkworm gut. The wound should then be sealed with a collodion dressing and a dry protective dressing of gauze applied external to this. Immobilization should be made by appropriate splints, or by a plaster-of-paris dressing, care being taken as to the position of the parts, and also that the joints above and below the seat of fracture are put at rest.

2. *Repair with Internal Fixation.*—While in a small number of cases perfect approximation may be obtained without the use of internal methods of fixation, the majority of cases requires it. This is especially so in spiral fractures of the tibia, in fractures of the clavicle, humerus, radius, patella and olecranon. The technic of operations on the patella is so perfect and the procedure is so well established, that it will not be described. The part is prepared aseptically and the fractured ends of the bone exposed, as in the methods above described. If it is found necessary to resect the ends of the fragments, in order to bring them into apposition, this can best be performed by protruding the ends through the wound, and then resecting as desired. This is feasible, however, only when one bone occupies the part involved, as in a fracture of the humerus or femur. In other cases the resection must be performed *in situ*. If the operation is

performed shortly after the time of the injury, resection is rarely, if ever, necessary. It is only in those cases in which, for some reason or other, the operation is not performed for several weeks after the time of the injury, fibrous tissue has formed about the ends, retraction of the tissues and shortening of the limb has occurred, that resection is required.

While some surgeons prefer to make the resection *in situ* by means of a Jeffray's chain saw, a Gigli saw, a Wyeth's saw, or a Hey's saw, the author considers that less damage is done to the soft structures, and particularly to the periosteum, by a chisel. This is preferred, because there is no danger of wounding the periosteum, separation of the periosteum from the bone is not required to such an extent as when a saw is used, the line of resection can be made at any angle, and the ultimate shortening is much less. The line of fracture, in most cases requiring operation, is oblique or spiral in direction, and as resection can be performed with saws only in a more or less transverse direction, the loss of bone by this method is unnecessarily great. Resection should be so performed as to leave the limb in its normal position, as to its rotation and its axis. When fibrous tissue has formed between the fragments, it should be removed by means of a curette or a gouge and the ends of the bone freshened by removing a small portion with a chisel. While a transverse section is the best for suturing and permanent approximation, it is in most cases performed at a too great sacrifice of the length of the bone, and should be used only when necessary. Small defects lost by comminution of the fragments will be repaired by the periosteum. The chief aim in operating should be to bring together, by direct fixation and complete immobilization, the different anatomic structures, permanently into their normal relations, which is always the ideal process of repair.

METHODS OF INTERNAL FIXATION.

When perfect reduction and approximation have been accomplished, internal fixation may be performed by one of various methods, depending on the selection of the surgeon. It may be stated here that the following methods of internal fixation are applicable, not only in recent closed fractures, but also in open fractures, in cases of non-union, mal-union and pseudarthrosis.

The mechanical appliances for securing internal fixation may be divided into the following classes:

1. Fixation by means of absorbable sutures. In this class are included sutures of plain catgut, chromicized catgut, kumol catgut, iodinized catgut and kangaroo tendon. Of these the only ones which will hold the fragments in place until union takes place are heavy (No. 4) chromicized catgut and kangaroo tendon.

2. Fixation by means of non-absorbable sutures. These consist of silk, silkworm gut, Pagenstecher's thread and iron and silver wire. When any of these sutures are used, they are generally retained permanently and become ensheathed.

3. Fixation by means of bone and metallic ferrules, ivory, bone and metallic plugs to be placed in the medullary cavity; and ivory, bone and metallic nails.

4. Fixation by means of absorbable or non-absorbable sutures combined with ligating by means of silver or iron wire passed circumferentially around the fragments.

5. Fixation by means of instruments which consist of specially designed plates and screws, and are used in different methods of resection. In this class are included the instruments of Keetley, the metallic double staple of Gussenbauer, the plates and screws of Agnew and those of Steinbach.

6. Fixation by means of Parkhill's clamps. This method consists in fixing the fragments by means of two screws driven into the ends of each fragment and held immovable by means of external plates.

Of the various methods given above, there is no one which can be used without some external retentive apparatus, as splints or plaster-of-paris dressings. While all the methods have their advantages, the writer considers that the use of an absorbable suture, preferably, heavy (No. 4) chromicized catgut, meets all the requirements of an ideal suture for retaining the approximated ends in position, and has a greater range of applicability than any of the other methods in use. Non-absorbable sutures very frequently prove an irritant to the tissues, lower their vitality, increase the chance of infection, and, very frequently, require subsequent removal. The same may be said of bone and metallic ferrules, intramedullary plugs and metallic nails and screws. A great danger in the use of silver wire is the tendency for the wire to break, either at the point of twisting, or more frequently, it is cut by the sharp edge of the bone hole by slight strains, which so often occur before the external splint or plaster-of-paris dressing has been applied. The objections to the buried plates of Steinbach and of Agnew, and the method of Keetley, are that the screws very frequently pull out; these methods require a second operation for the removal of the plates, and the methods of resection used necessitate too great sacrifice in the length of the bone. These methods and that of Parkhill do not prevent considerable lateral mobility, and the presence of external openings, along the site of the screws in the latter method, is a constant source of danger in the production of infection.

As all methods require some form of external retentive apparatus, it would seem that the ideal form of internal fixation is the heavy (No. 4) chromicized catgut. This is condemned by some authorities on account of the stretching of the sutures, which may occur while applying the external dressing. This danger, however, is very small, while, on the other hand, it is an absorbable suture where the risk of infection is small, the direct approximation is perfect by this means, a secondary operation is not required, and the parts are left in an anatomically perfect condition.

In Cases 1, 9, 18, 19, 20 and 23 no bone suture was used. In Cases 2, 3, 4, 5, 6, 7, 8, 10, 11, 21 and 22 chromicized catgut (No. 4) was used to hold the fragments in apposition. In Cases Nos. 15, 16 and 17 silver wire was the suture used.

TECHNIC OF SUTURING WITH CATGUT.

Having arrived at the stage where the fractured ends are in perfect apposition, the suture holes should be drilled with a Lentz, Brainard, Hamilton or Gaillard bone drill. The suture holes should be placed one-fourth to one-half inch from the fractured edge and at intervals of every half inch. When the resection is performed *in situ* the suture holes should be made only through the compact bone into the medullary cavity, and not through the entire diameter of the bone. If the ends have been brought through the wound for resection, the holes may be made through the entire diameter of the bone. The catgut sutures may be introduced through the suture holes by means of a silkworm gut carrier, which is first passed on a curved needle reversed. After all the sutures have been introduced and the fractured ends approximated, an assistant should be assigned the

task of holding the extremity carefully until the final external dressing has been applied. The sutures are now tied securely and the excess cut away. The periosteum is united by interrupted catgut sutures. The overlying soft parts are united as described above and the wound closed without drainage. A collodion dressing is then applied, and immobilization secured by a plaster-of-paris dressing, so applied as to prevent angularity or rotation at the seat of the fracture and fixing the joint above and below the seat of fracture.

Immediate suture of the fragments is not necessary in all varieties of fractures. In some fractures about joints the fragments are so small, as in a fracture of a condyle of the humerus or of a malleolus in a Pott's fracture, that they may be held in perfect apposition by suture of the periosteum. For this purpose medium-sized (No. 1 and No. 2) chromicized catgut may be used and the fragments permanently retained in place by a suitable external splint or plaster-of-paris dressing.

The external dressing should be applied in such a manner as not to require a change throughout the entire treatment. If plaster of paris is used a window may be cut over the seat of fracture, so that the wound may be inspected when necessary, and the skin sutures removed at the proper time.

II. THE OPERATIVE TREATMENT OF OPEN FRACTURES.

The results obtained by conservatism and aseptic surgery are strikingly shown to-day in the treatment of compound fractures. Prior to the introduction of antisepsis and asepsis, amputation of the limb above the seat of a severe compound fracture was the rule. Later, when conservative methods were introduced, excision of joints near the seat of fracture was invariable, while amputation was the measure of last resort. Death from sepsis was very frequent. The results of conservative and aseptic surgery of to-day are shown by the statistics of Scudder, who states that "the mortality has fallen from 68 per cent. a few years ago, preceding the introduction of antisepsis, to 2 to 3 per cent. at the present time." To-day, compound fractures, if properly treated, are attended by a very low mortality, and in most cases a good functional result is obtained.

In the treatment of all compound fractures attempts should be made to disinfect the wound thoroughly, so far as possible, to restore the parts to their anatomic relations, to institute adequate drainage and to immobilize the part until union is effected.

TECHNIC OF THE OPERATION.

The limb above and below the wound should be shaved and thoroughly cleaned with tincture of green soap and sterile water and 70 per cent. alcohol. The wound should then be thoroughly irrigated with normal salt solution. It is advisable in all cases to enlarge the wound and explore the seat of fracture. Torn muscles and nerves should be repaired and all bleeding vessels ligated. If the external wound is small and was evidently made by the fracturing force, rather than by a sharp fragment of bone, the chances of infection are much less. If one of the fractured ends protrude through the wound, the chances of carrying infection are great, and its end should be trimmed off with rongeur forceps until healthy clean bone is reached. Internal fixation should be performed with heavy chromicized catgut, as in the method detailed in the treatment of closed fractures. The remaining technic differs from that in closed fractures only in the fact that drainage should be used in every case.

If the chances of infection are great, internal fixation is preferably made with silver or iron wire, which should subsequently be removed. Drainage is best obtained by means of rubber tissue or a cigarette drain. A sterile gauze dressing should be applied and immobilization secured by a plaster-of-paris splint. A window should be cut through the latter so that frequent observation and dressing of the wound may be made. Drainage may be dispensed with in a few days if infection has not occurred. For the purpose of protecting the plaster-of-paris dressing, in case irrigation of the wound is required, the "window" and the surrounding plaster should be covered with rubber tissue. When wire has been used to secure internal fixation, it may be removed by a subsequent operation after union has become firm.

III. THE OPERATIVE TREATMENT OF UNUNITED FRACTURES.

In the class of ununited fractures may be included all cases of delayed union and pseudarthrosis. The chief causes of non-union are: (1) Failure of approximation of the fractured ends, due to the intervention of muscles, nerves, blood vessels, etc.; (2) muscular action; and (3) faulty immobilization. Constitutional diseases play but a small part in the prevention of union. Examination in such a condition shows the fractured ends to be separated and the intervening space filled by muscles, etc., or fibrous tissue. The ends of the bone are smooth and a condition of pseudarthrosis is frequently present.

TECHNIC OF THE OPERATION.

The technic of the operation consists in rendering the skin aseptic and exposing the seat of the fracture by the method given in the treatment of closed fractures. The periosteum should be divided longitudinally and its edges retracted. All fragments of bone, fibrous tissue, etc., should be removed by means of a curette, gouge or chisel. Care should be taken not to injure the periosteum. Portions of the fractured ends should be removed *in situ* by means of a chisel until healthy bone is reached. Frequently, in order to obtain approximation of the fractured ends, it is necessary to remove considerable portions of the bone. In case the tibia or the radius is the seat of the fracture, it is frequently necessary to remove a section of its fellow-bone in order to obtain approximation and to prevent a change in axis at the seat of the fracture. Internal fixation should be made by means of heavy chromicized catgut according to the method given above. The wound should be closed without drainage, and a well-fitting plaster-of-paris dressing applied, which secures perfect immobilization at the seat of the fracture and of the joints above and below the fracture. In this class of cases union takes place more slowly than in recent fractures.

IV. THE OPERATIVE TREATMENT OF SEPARATED EPIPHYSIS AND FRACTURES ASSOCIATED WITH DISLOCATIONS.

The chief difficulty met with in the treatment of separation of the epiphysis is due to the fact that an accurate diagnosis is often impossible, and the condition can not be determined to any degree of certainty by the *x*-ray, on account of the transparency of the epiphysis to the *x*-ray. The most accurate results in diagnosis are obtained by examination under anesthesia.

When it is determined by proper manipulation under anesthesia that a displaced epiphysis can not be replaced, or fails to remain in its proper position when reduced, operative intervention is indicated if we wish to prevent bones and joints from subsequently becoming deformed

Replacement of a displaced epiphysis after aseptic exposure is followed in most cases by union and normal growth of the epiphysis.

TECHNIC OF THE OPERATION.

The operative treatment differs from that used in the treatment of fractures in the adult. The introduction of sutures, and especially of metal and ivory screws, nails and pegs, is often followed by permanent atrophy of the epiphysis and subsequent failure of development of the involved limb. It is advisable in these cases, after exposure of the epiphysis under rigid aseptic precautions, to suture the torn periosteum, and if the capsule of the joint is ruptured, it should also be repaired. After approximation of the epiphysis and suture of the torn periosteum and capsule, the part should be held by an assistant until the operation is completed and the parts immobilized by a plaster-of-paris dressing.

Fractures associated with dislocations have always been followed by considerable deformity and impairment of the joint functions, when treated by non-operative methods. It seems rational that in cases in which the dislocation can not be reduced and the fracture treated at the same time, that recourse should be made to operative intervention. Under aseptic precautions the joint should be exposed, the capsule opened, the head of the bone replaced and the tear in the capsule repaired. If the associated fracture is one that is difficult to treat by non-operative methods, as a fracture of the surgical neck of the humerus combined with a dislocation of the head of the same bone, the fracture should also be exposed and the fractured ends sutured together with chromicized catgut. The part should then be immobilized in a plaster-of-paris dressing. Massage and passive motion may be instituted earlier under this method of treatment, and the chances of securing a movable joint, and absence of deformity will be greater when the condition is treated by operative measures.

V. THE OPERATIVE TREATMENT OF DEFORMITIES FOLLOWING FRACTURES.

The deformities following fractures may consist in (1) shortening; (2) shortening combined with alterations of rotation of the distal fragment; (3) angularity at the seat of fracture; and (4) limitation of motion, due to changes in the normal relations of the joint surfaces. Deformities most frequently occur in fractures of the clavicle; in fractures of the lower end of the humerus; in Colles' fractures; in fractures of the lower end of the femur; in spiral fractures of the tibia; and in Pott's fractures. In the correction of deformities following fractures, depend to a great extent the future usefulness of the patient, and in laborers it is of the greatest importance to leave his skeletal mechanics in as normal condition after the injury as they were before.

TECHNIC OF THE OPERATION.

While some deformities following fractures may be corrected to a certain extent by osteotomy (subcutaneous), or by the resection of a wedge-shaped piece of bone, the best results can only be obtained by exposing the seat of the former fracture and resecting the deformed area of bone. The operation should be performed under aseptic precautions. The site of the deformity should be exposed as detailed above. Care should be taken to separate the periosteum from the bone without tearing it. The section of bone may best be removed with a Gigli chain saw or with a chisel. The plane of section and the amount of bone to be removed will depend on the individual case. In a double bone limb it may be necessary to remove a section from the fellow-bone, to allow of approximation of the resected surfaces, and to prevent angularity at the seat of the fracture. This, of course, produces some shortening of the limb, but it is preferable to angular deformity. An intact periosteum may, however, fill in the gap between the resected ends, thus not necessitating resection of the fellow-bone. As frequently happens, however, the periosteum is destroyed to a certain extent at the time of the injury, and has been replaced by fibrous tissue, so that in this event regeneration from the periosteum may not occur, or at best it will be greatly delayed. In patients in whom the element of time is a consideration, resection of the fellow-bone is advocated. After resection, the ends may be held approximated by means of heavy chromicized catgut. The further technic is the same as that of recent fractures.

(To be continued.)

FURTHER STUDIES ON STREPTOCOCCUS INFECTIONS.*

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About two years ago Dr. Weaver and I[1] showed that the blood serum from patients with scarlet fever has no streptococcidal power during life in any stage of the disease. Through the researches of Lemoine, Slawyk, Hektoen and others we know that streptococci occasionally are found circulating in the blood of these patients and that the patients in whose blood cocci are found often make an uneventful recovery. Jochmann,[2] however, is of the opinion that the prognosis is very bad when streptococci are found in the blood.

What is true of scarlet fever may equally well be said of tonsillitis. Here, too, streptococci may invade the blood stream, but, in spite of this fact, the patient may make a rapid and satisfactory recovery.[3]

In erysipelas and in many wound and puerperal infections the tissues are invaded by virulent streptococci, but in a great majority of these cases the organisms disappear sooner or later and the patients make a complete recovery.

We know that normal human serum has no streptococcidal powers. Hence, the disappearance of the cocci from the blood and tissue can not be explained by assuming that the serum loses something during the height of the disease, but regains this substance as convalescence sets in and thus destroys the cocci. It is evident, therefore, that we must look for some other agent than the serum alone to account for the disappearance of the cocci from the blood and tissues during convalescence. According to Metchnikoff, Denys and Leclef, Bordet, Marchand and others,[4] this agent is found in the phagocytes. This view has not been universally accepted, although experiments show that it explains the facts better than any other theory that has been advanced. In a previous paper[4] I was able to show that the

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* This work, done at the Memorial Institute for Infectious Diseases, Chicago, was aided by a grant from the American Medical Association.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

1. Trans. Chicago Path. Soc., 1903, v, p. 285. Medicine, 1903, ix, p. 515.
2. D. Arch. f. klin. Med., 1903, v. 78, p. 209.
3. Rosenow, Am. Jour. of Obstetrics, 1904, vol. l, p. 766.
4. For a more complete review of the literature on phagocytosis see THE JOURNAL A. M. A., 1905, vol. xliv, p. 198.

leucocytes are the most important, if not the only, factor concerned in the destruction of streptococci in the body of infected rabbits and guinea-pigs. The view was expressed there that in man also the leucocytes play an important rôle in combating infection by these organisms, although not much work had been done on human infections.

In this paper are set forth the results of further studies of streptococcus infections in human subjects in the hope of determining just what factors are concerned in the destruction of the invading cocci, and an attempt is made to analyze more fully this phenomenon. In all instances where blood was used it was drawn from the vein at the elbow by means of a Luer syringe and defibrinated by gently whipping with a sterile wire. If the defibrinating is carefully performed not a very large proportion of the leucocytes are destroyed. In the experiments each tube contained from 0.8 to 1.0 c.c. of blood or serum which was inoculated with one loopful of streptococcus culture and two loopfuls from each tube were plated in glucose agar at intervals. The tubes were always kept in the incubator at 36 C. When highly virulent organisms were used 0.3 to 0.4 c.c. of defibrinated rabbit blood was added to each tube of melted agar to facilitate the counting of colonies, which often are very small if no blood has been added.

Table 1 shows that, although human serum in vitro is a good culture medium for streptococci, normal defibrinated blood has a slight streptococcidal power. Occasionally we may find a sample of normal blood which destroys many non-virulent streptococci, but the virulent organisms usually multiply in this blood.

TABLE 1.—THE EFFECT OF DEFIBRINATED NORMAL HUMAN BLOOD AND HUMAN SERUM ON STREPTOCOCCI.

Streptococci.	Defibrinated Blood.	Immed.	2-3 hours.	Colonies in Agar Plates. 5 hours
300	I	1100	....	160
300	II	3000	....	1060
300	IIa	680	675	1300
300	III	2600	2700	3500
300	IV	3000	1050	2600
300	V	540	360	240
300	VI	1100	500	390
298	VII	1600	600	315
298	VII	1600	600	315
298	VIII	600	80	16
B104	IIa	76	55	510
B104	III	1800	2800	Many
B104	IV	1600	3000	Many
B104	V	500	600	900
381	VI	2000	2300	Many
300	Serum IV	1400	2000	Many
298	Serum VII	1700	2500	10000

Source of streptococci: Strains, 298, 300 and 381 from heart blood of scarlet fever bodies, postmortem. B104 from an abscess in guinea pig: 298 and 300 are not virulent; 381 and B104 have been passed through rabbits and are highly virulent.

Table 2 shows that defibrinated blood from patients suffering from an acute infection has a much greater destructive effect on these organisms than has normal blood.

In these infections the leucocyte count is usually somewhat increased, and it seems that the streptococcidal power of the blood in vitro is roughly proportional to the leucocyte count. That is, the higher the leucocyte count the greater will be the streptococcidal power of the blood. This is a general rule, to which there are, however, a few exceptions, as will be pointed out later. The virulent organisms frequently multiply in these bloods unless the leucocytosis is very high. In no instance could a streptococcidal power of the serum alone be detected. It might be objected that we are not dealing here with an actual destruction of cocci, but that the decrease in the number of colonies on the plates is due to adherence of the cocci to the leucocytes. This objection is ruled out by the fact that the twenty-four-hour plates from tubes containing blood with a high leucocytosis are very often sterile or nearly so.

TABLE 2.—THE EFFECT OF DEFIBRINATED BLOOD FROM CASES OF SCARLATINA, ERYSIPELAS, TONSILLITIS AND PNEUMONIA ON STREPTOCOCCI.

Streptococci.	Defibrinated Blood.	Colonies in Agar Plates.			
		Leucocyte count.	Immed.	2 to 3 hours.	5 hours.
300	Scarlatina I	10500	1100	....	6
300	" II	10600	2000	....	140
300	" III	15000	690	270	116
300	" IV	.....	550	18	3
300	" V	.....	1500	300	150
300	" VI	.....	1900	350	43
300	" VII	.....	500	32	12
300	" VIII	13000	1380	102	9
300	" IX	.....	1200	125	14
300	" X	13400	1250	245	120
300	" XI	.....	1950	150	19
300	" XII	10800	1800	700	130
300	" XIII	.....	1800	300	45
300	" XIV	12300	1500	31	2
381	" III	15000	1200	1500	3500
B104	" IV	.....	600	462	415
B104	" V	.....	1800	1800	5000
381	" VI	.....	220	51	1100
381	" VII	.....	130	41	Many
381	" VIII	13000	360	1180	Many
381	" IX	13000	2200	1950	Many
B104	" IX	.....	330	190	1500
381	" X	13400	640	290	2500
B104	" X	.....	400	160	165
381	" X	.....	320	650	Many
381	" XII	10800	200	2000	Many
381	" XIII	.....	540	900	Many
300	Erysipelas I	.....	630	64	0
300	" II	15000	800	14	4
300	" IIa	.....	1100	41	8
300	" III	.....	740	120	160
300	" IV	.....	1650	480	150
298	" V	10400	3100	420	92
B104	" I	.....	1200	1080	960
B104	" II	.....	96	30	13
B104	" IV	.....	133	110	480
300	Tonsillitis I	16000	620	34	2
B104	" I	.....	300	59	70
300	" II	.....	1400	74	6
300	Pneumonia I	.....	2600	0	3
300	" II	.....	600	5	0
	SERUM.				
300	Scarlatina VII	.....	1500	3500	10000
300	" XIV	.....	1200	1400	1300
300	Erysipelas II	.....	670	760	750
300	" III	.....	700	1800	6000
300	" V	.....	3000	3500	5000
B104	" V	.....	190	360	1140

It has been thought possible that the serum during the course of an infection which terminates favorably might acquire streptococcidal properties for that particular race of streptococci which is responsible for the infection, while at the same time it had no such properties for other races of these organisms. Three strains of streptococcus were, therefore, isolated from erysipelas patients and the serum of each patient tested on the corresponding organism. All of the patients made a satisfactory recovery, but at no time could streptococcidal properties be demonstrated in their serum. The defibrinated blood, on the other hand, killed many of the homologous and other organisms as long as there was a high leucocytosis.

We know that there is an intense local reaction in the localized streptococcus infections, and it has been thought by some that there may be lysis of cocci by the inflammatory serum in these areas. It is difficult to confirm or refute this theory on account of the difficulty of obtaining inflammatory serum in the same condition as it is found in the tissues. As it is not uncommon to find blebs of considerable size on the affected parts of erysipelas patients, the fluid from these blebs was taken as the nearest approximation to the inflammatory serum. This blister fluid from several cases of erysipelas was tested for streptococcidal properties, but gave negative results.

The importance of a high leucocyte count in the destruction of streptococci by blood is clearly shown by the following experiment:

EXPERIMENT 1.—Ten cubic centimeters of blood were drawn from the vein at the elbow of an erysipelas patient and carefully defibrinated. One cubic centimeter of the defibrinated blood, which contained 9,800 white corpuscles per cubic millimeter, was put into a small test tube, inoculated with one loopful of virulent streptococcus culture and two loopfuls of the inoculated blood, plated at intervals. The remaining eight cubic centimeters were centrifugated and the serum drawn off. We know that the uppermost stratum of centrifugated corpuscles contains a high percentage of leucocytes, because they are thrown down less easily than the red corpuscles. This stratum was therefore drawn off with a sterile pipette and mixed with a small quantity of serum. The resultant mixture contained 17,200 leucocytes per cubic millimeter. One cubic centimeter of this "suspension of leucocytes" was introduced into a small test tube, inoculated, and plates made as before. To complete the experiment one cubic centimeter of the clear serum was put into a small tube, which was likewise inoculated, and plates made at intervals. This experiment was also performed with normal blood and a non-virulent streptococcus. The plates were incubated for twenty-four hours, and the colonies that developed on each were counted with the results shown in Table 3.

TABLE 3.

Strepto-cocci.		Leucocyte count.	Colonies on Agar plates.		
			Im-med.	2 to 3 hours.	5 hours.
B104	Erysipelas blood.....	9800	390	168	350
B104	Suspension erysipelas leuc.	17200	260	58	21
B104	Erysipelas serum.....	.....	200	360	1100
298	Normal blood.....	4400	1650	600	315
298	Suspension normal leuc....	6600	1600	420	62
298	Normal serum.	.....	1700	2500	10000

The table shows that both strains of streptococcus used multiplied in the cell-free serum; that the defibrinated blood destroyed many of the non-virulent and some of the virulent cocci, and that the "suspension of leucocytes" destroyed more cocci of either strain than the defibrinated blood. The only difference between the defibrinated blood and the suspension of the leucocytes lay in the fact that the latter contained nearly twice as many leucocytes as the former.

The fact that the streptococcidal power of the blood is dependent on the number of leucocytes it contains per cubic millimeter has also been demonstrated by a second experiment.

EXPERIMENT 2.—Shortly after a patient's admission into the hospital, 3 c.c. of blood was drawn from a vein at the elbow and defibrinated. The leucocyte count at this time was 11,000. The blood was divided equally among three tubes, and each tube was inoculated with streptococcus culture and two loopfuls from each were plated at intervals. Shortly after drawing the blood, the patient was injected under the skin of the back with 10 c.c. of an antistreptococcus serum. This brought about an increase in the leucocytosis[5] up to 15,000, five hours after the injection. Three c.c. of blood was again drawn from the vein at the elbow and its effect on streptococci tested as before. The results of the experiment are shown in Table 4.

The blood drawn after the injection of the serum, when the leucocytosis was high, has a greater streptococcidal power than that drawn before the injection. It would not be safe to conclude that this difference in the streptococcidal power is due entirely to the difference in the leucocyte count. Some of it may be due to an antitoxic or opsonic action of the serum or to a stimulation of the leucocytes. This supposition loses most of its force when we consider the fact that the addition of from 1 to 5 per cent. of antistreptococcus serum to defibrinated blood in vitro does not increase its streptococcidal power, as shown by Dr. Hektoen and myself.

5. I am indebted to Dr. Tunnicliffe for the leucocyte counts and the injection of the serum.

TABLE 4.

Strepto-cocci.		Leucocyte count.	Colonies on Agar Plates.		
			Im-med.	2 to 3 hrs.	5 hrs.
300	Blood before injection.....	11000	1100	360	200
B104	Blood before injection.....	....	390	380	4000
381	Blood before injection.....	....	100	500	Many
300	Blood 5 hours after injection..	15000	1300	44	....
B104	Blood 5 hours after injection..	....	412	246	600
381	Blood 5 hours after injection..	....	150	270	3000

Wright and Douglas have shown[6] that phagocytosis takes place only after the bacteria have been sensitized, that is, have been acted on by the opsonin of the serum. There is no phagocytosis in a suspension of washed leucocytes in NaCl solution or in heated serum, regardless of the number of untreated bacteria that are added. This work has been confirmed and extended by Hektoen and Ruediger[7] and by Bulloch and Atkin.[8] In view of these facts there should be no reduction in the number of streptococci in a test tube containing a suspension of washed corpuscles in salt solution or in heated serum, and the following experiment shows that such is the case:

EXPERIMENT 3.—Ten c.c. of blood was drawn from a vein at the elbow of a scarlet-fever patient, defibrinated, centrifugated and the serum drawn off. The corpuscles were washed twice in a large amount of NaCl solution, and 0.5 c.c. of the centrifugated corpuscles placed into each of three small tubes containing 0.5 c.c. of normal serum, 0.5 c.c. of heated serum (58 degrees for one-half hour) and 0.5 c.c. of salt solution, respectively. The tubes were inoculated with one loopful of streptococcus culture, and two loopfuls from each were plated at intervals with the results shown in Table 5.

TABLE 5.

Strepto-cocci.		Colonies on Glucose Agar Plates.		
		Im-med.	5 hours.	24 hours.
300	Washed corpuscles + serum.....	1500	7	21
300	Washed corpuscles + heated serum...	1400	5000	Many
300	Washed corpuscles + NaCl solution...	1700	3500	Many
300	Serum	1200	1400	Many

The importance of opsonin in the destruction of streptococci is further shown by the fact that the defibrinated blood from two obstinate cases of post-scarlatinal nephritis had no streptococcidal powers, although in one of these cases the leucocyte count was 14,000. When the blood from these patients was centrifugated and the corpuscles suspended in serum from a patient who was convalescent and had no nephritis, the resultant suspension had a small degree of streptococcidal power, as shown by Table 6.

TABLE 6.

Strepto-cocci.		Colonies on Agar Plates.		
		Im-med.	2 hours.	5 hours.
298	Convalescent blood.....	800	450	14
298	Nephritis blood.....	720	1900	6000
298	Nephritis corpuscles + conv. ser..	850	500	540
298	Conv. washed corp. + neph. ser..	725	600	61

The interesting fact came to light in these experiments that the combination convalescent washed corpus-

6. Proceedings of Royal Soc., 1903, vol. lxxii, p. 357, and 1904, vol. lxxiii, p. 128.
7. Jour. of Infect. Diseases, 1905, vol. ii, p. 128.
8. Proceedings of Royal Soc., 1905, vol. lxxiv, p. 379.

cles plus nephritis serum has nearly as great a streptococcidal power as the defibrinated blood from the patients without nephritis. The corpuscles were washed twice in a large amount of NaCl solution which is usually sufficient to prevent phagocytosis in a suspension of corpuscles in NaCl solution. It is not likely, therefore, that the washing had not been carried far enough. But the results of these experiments seem to indicate rather that the leucocytes as well as the serum from these nephritis patients have undergone some change which renders them less efficient in the destruction of bacteria. In fact, it would seem that the leucocytes have suffered more than the serum. Whether or not these facts may serve to throw light on the cause of some of the terminal infections can not be determined at this time.

It is an interesting question whether the opsonin is increased or not during the acute infections. Normal leucocytes in normal serum take up large numbers of cocci; hence, it is difficult to determine if leucocytes in erysipelas serum, for instance, take up more cocci than those in normal serum. This question had, therefore, to be approached in a different way.

EXPERIMENT 4.—Two sets of tubes were made and 0.2 c.c. of washed corpuscles introduced into each. To one set of tubes were added falling quantities of normal serum and to the other set falling quantities of erysipelas serum. The contents of each tube were made up to 0.4 c.c. with NaCl solution, and to each tube was added 0.4 c.c. of a suspension of streptococci. The tubes were incubated for one hour at 36 C., smears were made and the average number of cocci in each leucocyte determined by counting those in 30 leucocytes. The results are shown in Table 7.

TABLE 7.

Normal serum.	Phagocytosis.	Erysipelas serum.	Phagocytosis.
0.2 c.c.	13.5	0.2 c.c.	11.5
0.1 c.c.	9.4	0.1 c.c.	11.2
0.05 c.c.	6.7	0.05 c.c.	8.2
0.025 c.c.	4.7	0.025 c.c.	6.9
0.012 c.c.	2.2	0.012 c.c.	4.3

This experiment indicates that there is a slight increase of opsonin in the erysipelas serum as compared with normal serum. A similar increase of opsonin has been noted by Wright and Douglas[9] after treating with their staphylococcus vaccine a person afflicted with furunculosis. A diminution of opsonin in persons subject to attacks of furunculosis, sycosis, etc., has also been observed by these investigators.

CONCLUSIONS.

1. Human serum does not acquire streptococcidal properties during the course of a streptococcus infection.

2. The blister fluid from erysipelas patients has no streptococcidal powers.

3. Defibrinated human blood has a streptococcidal power which, with few exceptions, is roughly proportional to the leucocytosis.

4. The destruction of cocci in the defibrinated blood is brought about by the leucocytes, but before this can be accomplished the cocci must be acted on by the opsonin of the serum. There is no phagocytosis and hence no destruction of unsensitized cocci by washed leucocytes.

5. The opsonin is increased during the course of an attack of erysipelas.

6. In an attack of acute nephritis the opsonin is diminished, but the leucocytes also undergo a change which renders them less effective in the destruction of streptococci. This fact may serve to throw light on the cause of many terminal infections.[10]

9. Proc. Royal Soc., Sept., 1904.

10. I wish to thank Professor Hektoen for many suggestions, and the Internes of Cook County Hospital for courtesies.

DISCUSSION.

DR. M. J. ROSENAU, Washington, D. C., said that the results which Dr. Ruediger has obtained from his work on streptococcus infections have more than theoretical significance, for it is plain that this line of thought must eventually give practical results in the prevention and cure of the virulent infections caused by the various strains of streptococci. He said that Dr. Ruediger's paper clearly shows that the destruction of streptococci in the body is not the result of the serum or inflammatory fluids alone, but bears a direct relation to the number of leucocytes. This work gives a deeper insight into the process of phagocytosis and the part played by the leucocytes, especially in their relation to streptococci. Dr. Rosenau said that as a further confirmation of the opsonins described by Wright, it is a distinct advance in our knowledge of immunity.

PAROXYSMAL TACHYCARDIA: ITS RELATION TO EXOPHTHALMIC GOITER.

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It is my wish to emphasize the relationship apparently existing between certain cases of paroxysmal tachycardia and exophthalmic goiter, and to suggest that a more thorough examination of such cases may serve to trace the connection in a considerable proportion of instances. The more I see of this symptomatic disturbance, the less inclined am I to regard it as a definite entity or deserving of special caption in the category of disease. A superficial survey of the literature shows some 160 references to the subject, and as yet there has been no opportunity to observe what proportion of the cases are regarded by their reporters to have been due to exophthalmic goiter, though it is apparent that the percentage is small. It is hoped that a thorough resumé of the subject may be embodied in a future note. The present communication is actuated by two recent cases in my practice, of which full histories and notes to date follow:

CASE 1.—*History.*—Mrs. C., aged 38, married 16 years; has two children, the younger of whom is 8 years old. No miscarriages. Puberty at 12. Menstrual periods have always been accompanied by pain, which was relieved when the flow became established. Ordinary diseases of childhood, but no specific or rheumatic history.

Present Sickness.—The patient complains of constant pain in the legs, mostly at the knees, especially the right knee. This pain extends upward at times, and again downward, is dull in character but liable to acute phases, at which times there is apt to be locking of the right knee joint. There is a limp in walking which has been noticeable for twenty years. She also complains of hemorrhoids. The chief symptom and the one for which she seeks relief is periodic palpitation of the heart with hurried breathing, and some pain in the chest at such times. The attacks come on without warning, but usually follow fatigue or excitement. There is no regularity in occurrence, nor association with the menstrual period. Of late she has had one each month, lasting from two to ten hours. The duration of the complaint covers a year's time.

In the family history there is nothing to note beyond rheumatism in the father and "an asthmatic complaint" in the mother.

Examination.—Patient is above average height, well nourished, weight 125 (below her normal); the skin is soft, smooth and elastic, and the exposed portions are somewhat bronzed; the palms are moist, the fingers broad but not clubbed. Pulse 114, soft, low tension, fairly full. There is apparent and palpable enlargement of the thyroid body of which she was unaware. Circumference of neck over greatest prominence, 13⅝ inches. Lungs negative; expansion is free and symmetrical; epigastric angle acute. Apex beat is in the sixth space inside the mammary line. Dullness one finger breadth to right of sternum. Heart sounds are distinct and clear. A rough sys-

tolic murmur is present over the base and is not transmitted. Epigastric pulsations are apparent and the systolic murmur is heard here, but not elsewhere in the vessels.

Liver, stomach and splenic outlines are normal in size and position and the abdomen generally is negative.

The grasp is firm, stronger in the right hand. Supinator jerks diminished on both sides. There is tremor, fine, about seven to the second, most noticeable in the extended fingers, but palpable in the thighs on shifting the body weight from one leg to another. The knee joints are normal and symmetrical to inspection and palpation. Knee jerks are exaggerated. Normal flexor response on both sides. There are no disturbances in tactile or thermal senses.

The back shows the remains of an old kyphoscoliosis. She wore a brace for this condition for four years, but for the past two years has had no trouble.

The mucous membranes show no bronzing. The pupils appear large, but are equal and react to light and accommodation. There is no Stellwag or von Graefe sign or exophthalmos.

Pelvic examination shows the uterus in good position and freely movable, a tenacious discharge coming from a large and eroded os. The fundus has a depth of 3¾ inches and the interior is somewhat granular. Rectal examination shows some hemorrhoidal tissue, but not exuberant, and a few anal tags.

Lavage shows a normal gastric secretion. Blood: erythrocytes, 3,400,000; hemoglobin, 70; leucocytes, 8,700. Urine, total, 24 hours, 1,060 c.c.; acid; sp. gr., 1016; urea, 1.7; no albumin or sugar, amorphous urates, mucus and vaginal epithelia.

Diagnosis and Treatment.—A diagnosis of exophthalmic goiter was made and the patient put on the following treatment: Graduated tub baths, 85 to 105 degrees, three times weekly, alternating with salt glows and alcohol rubs, with gentle massage to promote a healthy skin function; nutritive, full, easily assimilable diet, daily exercise out of doors; the application of the direct current, 20 milliamperes, the anode over the thyroid and the cathode on the cervical spine, for ten minutes three times a week; liquor potassii arsenitis, 2 mm. t. i. d. Treatment was begun April 25, 1904. The pulse ranged daily from 100 to 115.

First Attack.—On May 8 at 8:30 a. m. a paroxysm began and continued until 4:30 p. m. The patient took the position of greatest comfort for her, dorsal with a very low pillow, and lay quietly throughout the attack. The skin was flushed, moist, the expression good, the pupils dilated and sluggish to light and accommodation. The pulse was soft and weak and many waves failed to reach the wrist. The cardiac impulse covered an area the size of the palm and was observed to be forcible and sharp. The sensation conveyed to the hand was of a machine tapping from below. At a distance of a foot from the chest the quick systolic thumping of the heart could be distinctly heard. With the stethoscope the first sounds were loud and ringing, the second almost in abeyance everywhere. With the hand or the stethoscope the rate of the tachycardia could easily be noted, ranging from 190 to 240 throughout the paroxysm and recorded every hour. She complained of rather severe pain, also paroxysmal, and not related to the frequency of the heart, in the heart area radiating to the back. Once or twice during the day she took nourishment.

About 4 p. m. the patient's condition was as follows: Sweating and diuresis (the latter 1,120 c.c. since 8:30 a. m.), moderate cyanosis of ears, lips and fingers, expression one of great fatigue, pupils unchanged, pain intermittent and severe, heart rate 198. Heart dullness extended two fingers to right of sternum, the veins of the neck pulsating and full. Heart sounds weak and flapping. Respirations 30 and sighing.

At 4:30 p. m. the cessation of the attack was marked by a fall in respirations to 20, a general feeling of betterment, absence of pain and diminution of sweating. The behavior of the heart was most interesting. Now and then with the weak beats came a strong one, and occasionally a strong beat would take the place of the two or three weak ones, giving a curious arrhythmia and force wave. The strong beats all sent waves to the wrist. Gradually the strong beats gained supremacy over the weak ones until the ratio became about 3 to 1, and from then on there was a widening ratio until within an hour the heart settled down to steady work at 105.

At 9:30 a. m., after having made use of such therapeutic measures as stretching vagi by posture, pressure on them, holding the breath, iced and hot drinks, heat and cold to the precordia, there were given digitalin 1/100 gr. and ergot 1 dram hypodermatically; at 11:30 morph. sulph. ¼ grain; at 2 p. m. spartein 1 grain; at 4 p. m. morph. sulph. ½ grain and digitalin 1/50 hypodermatically. We were under the impression that the last medication was effective, but were not unmindful of the fact that the paroxysms not infrequently terminate without medication.

The following day the patient was out of bed and feeling about as well as usual. From this time until June 5 she improved generally. The tachycardia diminished from 105 to 110 to 90 to 96 and the neck measured 13 inches. She continued taking arsenic and was put on the infusion of digitalis, half an ounce t. i. d., gradually diminishing it as the tachycardia grew less pronounced.

Subsequent Attacks.—June 5, however, she had another seizure, commencing at 10:30 a. m. and ending at 3 p. m. At the outset she was given digitalin 1/50 grain, and this was repeated at 2:30 p. m. The attack was much the same as the preceding, but with less pain. The highest heart rate was 240. There was less sweating and no cyanosis. In the next two months the patient was without attacks. She then passed from immediate observation. Since then there have been seizures of moderate severity, but a recent communication, June, 1905, tells me that she is much improved. What medication, if any, she is having is not made clear, but at last accounts she was taking a combination of strophanthus, digitalis and nux vomica tinctures, 5 minims each, t. i. d.

CASE 2.—*History.*—Mrs. P., aged 40; has three children, youngest 16, no miscarriages, had difficult labors, with lacerations each time, which were repaired. Menstruation regular, no pain, flow slight and becoming more so; duration one day.

Present Sickness.—She was well up to four years ago, when she began having palpitation of the heart, accompanied by shortness of breath at irregular intervals, the attacks coming on suddenly and lasting from one to five hours. Later she began to have pain with the attacks, severe, in the cardiac regions and neck, radiating into the left arm. She states that her nervousness in general has increased. The longest interval between attacks has been three months, and on the other hand she has had as many as three in one month. Occasionally she is able to foretell oncoming paroxysms by increased nervousness; at other times they appear without warning. During the attacks she sits on a chair or the bedside, or lies back on the pillows between the exacerbations of pain. The pain is severe but not overwhelming, and is relieved by pressure. Between attacks she feels and looks well. The appetite is excellent, there is no constipation, and she sleeps well.

In February of 1905 she had right lobar pneumonia and made a good recovery. Her personal and family history are otherwise negative.

Examination.—Height 5 feet 2 inches; weight 130. Fairly nourished, muscles somewhat flabby, skin dry and scaly. Slight bronzing in the posterior cervical regions and a muddy color of the face. The neck measures 13⅜ inches. The thyroid body is not apparent on inspection, but can be made out by palpation. The thorax shows the scar of an old abscess in the left breast. A thickened pleura and impaired resonance over the upper right lobe mark the site of the pneumonia area.

The heart is enlarged to the left, the apex lies in the sixth space just inside the anterior axillary line; the sounds are clear; the pulmonary second sound is accentuated. The right heart is not demonstrable. Pulse 105, respiration 20, temperature normal. The abdomen is negative. The pelvic examination shows the repairs, and a slightly enlarged but otherwise normal uterus.

There is no exophthalmos apparent, but occasionally there is observed von Graefe's sign. The pupils are slightly dilated and sluggish to light, but react briskly to accommodation. Muscular power is fair.

There is tremor, fine (6 to 8), particularly noticeable in the extremities, but present in all muscles that are called forcibly into play. The deep reflexes are exaggerated. The sensory apparatus is keen. There are no hysterical stigmata.

Urine, 1,420 c.c., acid, sp. gr. 1019; urea, 2.1, no albumin or sugar.

First Attack.—Blood: Reds, 3,125,000; hemoglobin, 62 per cent.; whites, 6,400. On the night of May 17, 1905, she had a paroxysm, commencing at midnight. She was seated in a chair, her posture of greatest comfort. The heart rate was 220, respirations 30, the pain was endurable and not constant, her face was flushed, the skin moist, and the kidneys were active. Before I saw her she had already taken strychnin, 1/50 gr., and digitalis, 1/100 gr.

This seizure occurred before I had examined the patient, and when I reached her side her husband told me his physician had said she had angina pectoris. Without waiting to examine her with any degree of care, I gave her hypodermically, at 12:30 a. m., nitroglycerin, 1/100 gr. Between that time and 1 o'clock, when the paroxysm ceased, I was able to observe her more closely and to recognize the nature of the disturbance. I am by no means convinced that the injection availed whatever, yet I am certain that it did the patient no harm. It was the slightest paroxysm she had ever had. The character of the heart's action, its behavior during the continuance and decline of the seizure and the general features of the circulatory disturbance were so similar to the case previously outlined as to require no further description.

Subsequent Attacks.—The following day she was apparently as well as ever. The patient went to her home, at some distance from the city, and did not return until June 15. The multiplicity of her household duties and the fatigue of travel made her very nervous and she was able to foresee another paroxysm, which eventually appeared at 7 p. m. on June 19 and continued for three hours. Before I reached her she had taken, as usual, the strychnin and digitalin. I promptly gave her nitroglycerin, 1/100 gr., with no damage and no relief. She was then given morphin sulphate, ¼ gr., and digitalin, 1/100 gr., at half-hour intervals for three doses, when the pupils indicated their discontinuance; with this medication were employed all the customary physiologic remedies. There was no cyanosis or dilatation during the attack and the course was generally characteristic. The morphia controlled the pain, but rendered the patient very restless and caused considerable nausea and vomiting after the subsidence of the paroxysm. A few days later the patient was put on the tinctures of digitalis, strophanthus and nux vomica, of each 5 minims t. i. d., and a pill of arseniate of iron, 1/12 gr., after meals, and was treated three times weekly with the direct current of 10 milliamperes for 15 minutes, the anode to the thyroid body and vagi and the cathode to the cervical spine. This treatment was given daily after the first fortnight.

July 5 the neck measured 12½ inches, with no change in body weight.

July 7 there occurred a curious variation of conditions. Following a regimen of the cardiac tonics above mentioned and a rather prolonged seance of electrization, the patient had a headache, neuralgic in type, gradually increasing in severity, worst at the occiput. The pupils became moderately contracted and sluggish both to light and accommodation. The pulse was full, hard, of high tension, 60 beats to the minute. The attack persisted for 24 hours. On July 9 the pulse rate had returned to 100 and was soft and compressible.

July 16 and 17 the patient had premonitions of a seizure. There were slight momentary attacks of tachycardia, the pulse being 200, with occasional pains in the chest.

At 5 p. m., July 18, a paroxysm came on. The pain and flushing were pronounced, diuresis was marked, the catheter being called into use hourly. In this attack, in addition to the customary medication, there was given atropin, 1/50 gr., but with no effect whatever.

August 4 was the date of the next seizure. It was 2 hours in duration, with all symptoms characteristic.

August 21 occurred the last paroxysm up to the present time, October 10. It was characterized by pain, less severe than usual, and absence of extreme tachycardia. At its height the pulse rate did not exceed 120.

At the conclusion of the patient's residence under my care, September 1, her weight was 140, her general condition excellent. The neck measured 12¾ inches. The tremor was much less evident. A recent communication from her informs me that she has continued to do well and is feeling much improved.

I was so fortunate as to have both these cases under immediate and constant observation, personally and by competent nurses. The cardiac rate was taken invariably at the heart, for often at the wrist the pulse was uncountable and occasionally unappreciable. Sources of error have been allowed for. The counting was done by the hand over the precordia, by stethoscope and by flags on the chest wall. Considerable doubt has been expressed by not a few of my colleagues as to one's ability to count 240 to the minute. The average watch ticks 5 to the second, or 300 to the minute, and is readily countable, particularly if taken by tens. Some practice is necessary in recording observations in tachycardia by any method other than instrumental. The rather exceptional advantages afforded for observation in the two cases submitted have made me confident that the records are approximately exact. Of late good results have been obtained, in some instances, by treatment with thyroidectine. I have had no personal experience with the remedy.

THE PRESENT STATUS OF THERAPEUTICS.*

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When I was a student at Jefferson Medical College one of the members of its distinguished faculty made the assertion that he "could encircle the globe and cure more diseases with four remedies than could be cured with all the balance of the materia medica." The four remedies named were quinin, opium, mercury and iodid of potassium. None will deny the therapeutic power of these drugs nor the vast scope of their usefulness. Indeed, the more we consider the statement the more we question whether it does not hold good to-day, notwithstanding that it was made more than twenty-five years ago.

We are forced to ask ourselves whether therapeutics has been standing still while pathology, bacteriology, chemistry, diagnosis and surgery have rushed into such prominence as to challenge the admiration of all who keep pace with the progress of the sciences, and while preventive medicine and sanitation, which stand alone in achievement for the welfare of men in every walk of civilization, have made habitable the squalid tenements of the dependent poor, protecting the middle and moneyed classes against the results of their own follies in social life, making possible the great commercial undertakings of nations, and encompassing the most remarkable saving of life from disease in the latest and most destructive war of modern times?

It is not my purpose to discuss the therapeutic action of individual remedies nor to rehearse what has been written concerning the numberless new remedies which are constantly forced on our notice through the energy of the army of manufacturers, all of whom claim special therapeutic advantages for their products, and whose assertions, if true, would leave nothing to be desired in remedial agents. This multitude of new remedies comes to us like the leaves of the forest—they hold the attention for a season, then fade, die and pass away. Many of them prove totally worthless, but they disappear only to be replaced by others of a similar kind, going to a similar fate.

The effect on the status of therapeutics is to make con-

*Read before the Missouri State Medical Association at Excelsior Springs, May, 1905.

fusion worse confounded and to engulf the real object of the therapeutist in hopeless chaos. It is my desire to bring this condition of things to the minds of practical men and to ask their aid in bringing some sort of order out of this evident confusion.

There was a time when the U. S. Pharmacopeia and the U. S. Dispensatory were the guides to what should and should not be considered as real therapeutic agents. Admitting their shortcomings, and these were undoubtedly many, they were the channels through which we might obtain that which was best, since they represented with some sort of system the true worth of drugs.

Times are different now. I believe it is safe to assert that 90 per cent. of all prescriptions written call for non-officinal drugs that have been put on the market by those averse to the best interests of therapeutic progress.

Manufacturers are supplying us with thousands of different remedies, but how many practitioners can name fifty or even twenty-five of them? How many remedies compose your medical armamentarium? What do you know concerning the remedies you are using and from what source have you learned it? An agent, often a non-medical man, comes to your office, displays the wares that you are asked to prescribe and presents pamphlets, catalogues and dogmatic clinical assertions from men of whom you have heard nothing, and consequently who are not known by you as men in whose judgment you should place confidence, and yet you are expected to recognize them as authorities to point the therapeutic way. It is in this way that you are asked to use these remedies —of whose composition you know nothing—on the sick who have entrusted themselves to your professional care.

In the face of such conditions is it any wonder that the therapeutic sensations of to-day are forgotten in their grave of oblivion to-morrow? Is it to be wondered at that the profession is overrun with therapeutic nihilists who know nothing of curative methods and are content to grope about in the mass of new remedies, hoping to find a cure for pneumonia, phthisis and typhoid fever, and are willing to cast their fortunes with the commercialists and to adopt their easy fashion of labeled tablets, which tell the diseases—and they are many —in which they are to be used, the dose, and how to use them?

I am far from saying that no good remedies can reach physicians in this way. My plea is for some means to get and to hold fast to that which is good, from whatever source it may come, and to be delivered forever from the worthless mass which pours on us to our disgust. If a manufacturer evolves a preparation that is a real improvement let him have the credit and the profit, so long as everything known about the remedy is made public and that no mystery attaches to it, and no ridiculous claims are made for it as a therapeutic agent.

Let the medical profession demand that there be some recognized method of proving the therapeutic value of every agent offered to it, and that the sign manual of such proof shall accompany it. Then, and not till then, will the shameless business for which these remedies are primarily responsible cease to be. I had the honor to suggest in a public address a year ago that the legislature be petitioned to pass a law requiring every package containing medicine to be sold or given away in the state of Missouri to have a label setting forth the exact contents. I reiterate, with deeper conviction than ever, that it is the duty of the state to protect its people against the infamies of "patent medicine" venders, who are doing more harm and causing more ruin that any disease which is fought and quarantined by the State Boards of Health. How much more should we demand absolute non-secrecy about the preparations we are to use on the sick, and also honesty in their exploitation.

With the gallant band of our professional brothers now members of the legislature such a bill would find a sufficient number of Davids to slay the Goliaths of this iniquity.

I stated some time ago that the medical profession itself is primarily responsible for the existing condition of things. Physicians have allowed themselves to become animated billboards on which have been written the advertisements of unscrupulous scamps, and then have been made to parade their asininity and poverty before the public, while the compounder of some whisky, cocain, morphin or iron preparation or coal tar and caffein powder grows into a money magnate who laughs at our gullibility and then stands in the lobby of our legislatures a bulwark against right and justice.

Again the responsibility of the profession is shown in the license allowed medical journals which are absolutely the creatures of physicians and should be under their control. If no physicians patronized medical journals which are under the control of nostrum manufacturers their days would be few and full of trouble. With the great number of struggling orphans in the journalistic world it is a matter of necessity with many of them that they have advertisements—good if they can get them, but bad if they must have them. The wealthy parasite above referred to knows their necessity and commands their columns to send broadcast to the world the debauching mixtures he has concocted, and the poor, honest, unsuspecting physician continues to patronize his worst enemy and to obey the scriptural injunction by turning the other cheek to be smitten.

If this shameful business were confined to the weaklings of the medical press it might be viewed with some sort of compassion, but with no justification of the wrong, but when it finds place in the powerful metropolitan journals, those by which we are to be judged, and when the advertising stuff on either side of the reading matter makes the latter look like the ham in a poor boy's sandwich, then, my brethren, "the offense is rank and it smells to Heaven."

Take this, for example, from a reputable journal: "Antiphlogistine is now the standard remedial agent for pneumonia, pleurisy and bronchitis, primary or secondary to la grippe or any other disease." It then proceeds to recite ten reasons why this is true, two or three of which will convince any scientific mind of the unimpeachable truth of these remarkable axioms: 1. "Because antiphlogistine draws the blood to the surface—bleeds but saves the blood." 2. "Antiphlogistine by reflex action contracts the pulmonary vessels, thus depleting the lungs into the dilated superficial capillaries." 3. "Antiphlogistine relaxes the muscular and nervous systems, thereby tending to induce sleep." I ask you to ponder well these profound scientific truths and the reason for their enunciation will become clear as mud.

The chests of pneumonia patients all over this land in this enlightened age are being smeared with this stuff because the benevolent proprietors tell physicians to do it. Commercialism is paralyzing individual thought in therapeutics and making it the subject of ridicule by sensible men.

Think of Osler making a careful diagnosis of pneumonia and then solemnly ordering the patient to be encased in "the standard remedial agent" because he knew

it to be a "blood drawer," a blood saver, a hypnotic and anodyne all in one, and then instructing the nurse in the event that the Congressman's catarrh should grow worse or evidences of heart failure manifest themselves, to resort at once to full doses of peruna until decided evidence of alcoholism became manifest. If he followed this therapeutic trend he would be in line with a large number of men now claiming to be regular practitioners of medicine. Is it to be wondered that so many neuropathic inferiorities prefer to be healed by "absent treatment?"

Here is another gem found in a medical journal, which, before its "consolidation," declared it would permit no irregular advertisement to defile its pages. Under scare head lines the word catarrh is emblazoned over the statement that "germiletum is really a specific in catarrh!" "Germiletum is also unexcelled in eczema!" You will notice that a specific has been found for that most widely spread affliction, catarrh, as well as the seven-year itch, for one of the members of this society says in a testimonial of this new-found panacea: "Nasal catarrh, which has long been an odium of medicine, may now be combated successfully by the alkaline antiseptic germiletum."

A journal which has, or claims to have, "the largest circulation of any medical publication in the world," and whose editor, I am informed, is not even a graduate of medicine, but an undergraduate of an eclectic college, has for years done everything tending to cheapen and to degrade the medical profession, while it enriched its editor, is now claiming through a smart woman canvasser to be the best field for communications from medical men, "only professors in medical colleges," however, "because it reaches the largest audience in the medical world."

The character of this publication can be best understood when you know that it has persistently decried the uses of diphtheria antitoxin and lauded the antiseptic washes, gargles and so on manufactured by its opulent owner and publisher.

This shrewd canvasser called attention not only to the articles written by, but to the photographs of, the celebrated eastern luminaries who are to enlighten the benighted brethren of the south and west, to be found in this journal. It is painful to relate how many good but unwary men fell into the trap and became endorsers of this cheap and blatant sheet. It is gratifying, on the other hand, to know how many men refused to entertain the idea at all.

So long as the columns of medical journals can be made subservient to the commercial interest of proprietary medicine venders and quacks just so long will therapeutics of the scientific order be relegated into oblivion to the disgrace of physicians.

Let us devoutly hope that the pages of our own state journal will be kept free from quack and proprietary exploitation. If we cannot keep it alive without it, then let it die.

Lawyers have a supreme court whose decision is their authority for interpreting the law. Infallibility is not claimed for their rulings always, for this same court has been known to reverse itself; yet in the main it is right and just and errors are the exception.

The therapeutists should likewise have an authoritative body possessed of every known means for determining the therapeutic action of drugs, free from every selfish interest, political or commercial, and from the bias of theorists, and not paid by some firm or individual to report the action of remedies placed in their hands, to be put on the market under a trademark like any other commodity.

What an inestimable boon would such a body confer on the medical world if it could send out remedies for disease whose therapeutic qualities were definitely known and about which there could be no cavil, and if at the same time it could eliminate from text-books mention of all remedies which did not possess distinct therapeutic power.

Look at the things which are being accomplished by the government, state and national, in the biologic boards of research in determining the cause and cure of the diseases of plants and animals. The findings of such a body make the therapeutic law for application to all animals alike, whether their owners believe in pathology and rational therapeutics founded thereon, or follow the elusive delusions of christian science, or have no beliefs at all.

I would hail the day when the government should announce itself ready to establish such commissions for research into the etiology and cure of human diseases. Witness the one glorious result achieved by the immortal commission sent to Cuba for the investigation of yellow fever after the war with Spain. It has done nothing greater since the nation was born.

Finally I must conclude that the status of therapeutics to-day, considered as an organized system of practice, has lost its prestige under the blighting curse of commercialism, aided and abetted by the very men who are or should be its natural defenders.

I have presented some of my views on this very important subject, hoping to have the opinion of this society as to their worth or worthlessness. After all is said and done, research that does not find something of value for the cure of human ills is no better than a fruitless tree, an encumberer of the earth, and should be cut down.

In an address delivered before the graduating class of the medical department of the St. Louis University on May 8, 1905, Dr. John M. Dodson, dean of the medical department of the University of Chicago, said: "No doctor should prescribe any remedy whose formula is not known." Let this fact sink deep into our minds and make us resolve anew, each and every one of us, to do his utmost to drive the noisy commercialist out of our midst and to allow the present highways of trade to return again to the serene and thoughful avenues of scientific pursuits. Then will rational therapeutics take its proper status and medical men everywhere be clothed with becoming dignity.

Test for Bile Pigments.—A. Raphiel (*St. Petersburg. med. Wochenschr.*, No. 14), describes a method of testing for bile pigments in the urine which has been very satisfactory in his experience. He uses the well-known diazo reaction—first, sulfanilic acid (5.0), muriatic acid (50.0), distilled water (100.), and, second, sodium nitrate (.5) and distilled water (100.0). For the first test he puts 2 or 3 drops of the soda solution with about 5 cubic c.c. of the other and adds 5 c.c. of the urine to be examined. The presence of bile pigments will show itself, first, in an amethyst color, passing in a short time to a cherry red. The intensity of the color increases in icterics during the first 24 hours. If the urine is very diluted, the red color is still visible against a white background. A second test is given as follows: To 2 or 3 drops of the soda solution added to the urine the sulfanilic acid is then added, and the fluid, according to the quantity of bile pigments present, takes on a more or less intense yellowish-green color, passing in the 24 hours to the above-described cherry red.

SPIROCHÆTE OBERMEIERI.*

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PRELIMINARY NOTE.

The spirochete studied was obtained through the kindness of Dr. Norris of Bellevue Hospital, New York, who secured it from a case of relapsing fever by inoculating the blood into monkeys and white rats. The organism has been kept alive by successive passage through white rats for over two months. As a result of intraperitoneal injection the parasites appear in the blood in thirty-six to forty-eight hours after inoculation, disappear within the next twenty-four hours and do not reappear. The rats are then immune to subsequent inoculation. The disappearance of the spirochetes was shown to be due to the formation of anti-bodies. Spirochetal blood, when kept *in vitro*, retains its virulence for more than fifteen days.

The blood of rats which have been given repeated injections of spirochetal blood exerts a most marked preventive and curative action. When injections of such blood are made, before inoculation with spirochetes, the latter fail to appear. Similarly, when simultaneous injections of immune and spirochetal blood are made, no infection results. Even when the immune blood is injected ten, twenty-four and thirty-eight hours after inoculation with spirochetes, that is to say, at any time before the spirochetes actually should appear in the blood, they will fail to appear, whereas in the controls they become numerous.

The curative action of the immune blood is equally pronounced. In rats which have from 5 to 10 spirochetes per field of the one-twelfth inch objective, an injection of 2 c.c. of immune blood is followed *within one hour* by a total disappearance of the spirochetes from the circulation. After this, the parasites do not reappear, while in the controls they persist for twenty-four hours. This remarkable action of immune blood in the case of the white rat will form without doubt the basis of curative and preventive treatment in relapsing fever and in tick fever of Africa. It is the intention of the authors to work out the practical application of the principle discovered.

Spirochetal blood, which has been diluted with ten parts of salt-citrate solution, when filtered through a Berkefeld filter, under a pressure of 50 pounds, yields a filtrate which, when injected into white rats, produces typical spirochetal infection. This result was obtained in seven out of ten experiments. The spirochetes, as in the case of cultures of *Trypanosoma lewisi*, are filterable through a Berkefeld filter. Attention is called to the importance of this fact in its bearing on the so-called ultramicroscopic organisms.

All attempts thus far to cultivate the spirochete on blood agar have failed, but this subject will be followed further. The spirochetes multiply by transverse division and show other characteristics which belong to bacteria, notably, their behavior with reference to distilled water. When rat blood, which is rich in spirochetes, is placed in a thin collodium sac and dialyzed in running distilled water, the organisms do not undergo any change in form even after twenty-four hours. During the first five or six hours their motility is unimpaired, but after that they become more and more sluggish and finally come to rest. Even after a dialysis of eleven to twenty-four hours such blood is infective. Under similar conditions the rat and nagana trypanosomes rapidly plasmolyze, within an hour or two, and become hardly recognizable. At the same time they lose their infectiveness.

This behavior of the spirochetes in distilled water, that is, absence of marked plasmolysis, corresponds to that of bacteria under like conditions. This test may, perhaps, serve as a more or less general means of differentiating between bacteria and protozoa. The transverse division of spirochetes, the absence of definite structure, such as the presence of well-marked nucleus and blepharoplast, and the absence of plasmolysis would indicate that the *Spirochæte obermeieri* belongs to the group of bacteria.

On the other hand, the transmission of spirochetal diseases by insects, the persistence of the organisms in such insect hosts for months, and the infection of their eggs are the main facts known at present which point to a possible protozoal nature of the parasites. The persistence of the spirochetes of tick fever in the blood of rats for three to eight days, as shown by Dutton and Todd, would indicate that their organism, though closely related, is nevertheless different from that studied by us. It goes to show that the tick fever of Africa and the relapsing fever of Europe are due to different species of spirochetes.

*From the Hygienic Laboratory, University of Michigan.

INDICATIONS FOR STRYCHNIN AND NITROGLYCERIN IN CIRCULATORY DISORDERS.

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The pharmacologic action of nitroglycerin is erroneously conceived by some physicians. I have heard practitioners remark that "even the use of nitroglycerin and strychnin is ineffectual in causing a weakening circulation to recover." To understand the therapeutic indications for these two drugs in circulatory symptoms, a thorough knowledge of a portion of the physiology of the circulation is absolutely necessary.

The heart is a muscular organ which pumps the blood into the aorta at a rate which normally maintains the blood pressure constant, within certain narrow limits. The control of the heart's rate is automatic. The vagus and sympathetic nerves carry impulses to the heart; the former is the inhibitory nerve and the latter the accelerator. A small nerve running in the same sheath as the vagus, called the depressor, is the sensory nerve to the heart. The small blood vessels, the arterioles, have their caliber controlled by the vasomotor nerves. The centers of these four sets of nerves functionally must be intimately associated in the central nervous system. A rise of blood pressure, due to a constriction of the arterioles, or to an increased amount of blood, normally causes a slowing of the heart's rate. A fall of blood pressure due to causes, the reverse of those just mentioned, brings about an increase of the cardiac rhythm. Both changes in the rate of the heart's action are attempts, through the reflex nervous system, to maintain the blood pressure at the usual height. Any slight alteration in the caliber of the arterioles, or in the amount of fluid, or in the rate of the heart, is readily compensated for by the necessary change in one or both of the others. For example, a loss of a small amount of blood may not cause a fall of blood pressure, for the reason that the arterioles will contract, or the heart will increase slightly in either rate

or depth of beat. A gradual introduction of an isotonic sodium chlorid solution into the blood vessels produces no change in the height of the blood pressure. The compensation is by a dilatation of the arterioles or by a slowing of the cardial rhythm.

It is due to the tension under which the blood is held in the aorta that the circulation through the periphery is accomplished. Indeed, the heart's function, strictly speaking, is to maintain the requisite pressure in the aorta; on this account the intimately connected system of nerves is necessary. The arteries which conduct the blood to the brain are fed from the aorta, and it is hardly necessary to state that anemia of the brain will result from a sufficiently low blood pressure; and the same is true of any other organ.

Since the heart is an organ which is continually working, it is necessary that there be no cessation of its supply of nourishment, or of the elimination of its waste. The arteries conducting the blood to the heart are branches from the aorta, and therefore the amount of blood passing through the coronary circulation depends directly on the tension of the blood in the aorta. A rise of blood pressure by some cause other than an alteration in the heart's rate, causes a slower heart rhythm in an attempt to compensate; but if compensation is not complete, more blood passes through the heart, and the resulting better nourishment and better elimination causes a stronger cardiac beat. A fall of arterial tension, as a result of changes in the amount of blood or in the size of the arterioles, causes, in an attempt to compensate, a more rapid rate of the heart's rhythm; but if compensation is not complete, there is a proportionate decrease in the amount of blood passing through the coronary vessels, and a poorer nourishment of the heart muscle, and decreased elimination of its waste, and consequently a less efficient systole.

Strychnin stimulates the vasomotor center. This results in a constriction of the arterioles and in a consequent rise of blood pressure, and therefore a better coronary circulation; this produces the improved systolic contraction described above. In some exceptional cases, strychnin has a stimulating effect on the vagus centers, thus bringing in the inhibitory effect of the nerve and slowing the cardiac rhythm. This may counteract the effect of the constriction of the arterioles to such an extent that there results no rise in arterial tension.

Nitroglycerin, which chemically is a trinitrate of glycerin, is decomposed in the body into nitrates and nitrites. The small amount of nitrates formed has little or no action in the body. The pharmacologic action of nitroglycerin is due, therefore, to the nitrites. The decomposition taking place gradually, there are no such sudden marked effects as in the administration of a pure nitrite. For the same reason, the effects are more prolonged from the administration of nitroglycerin than from administration of a nitrite. The nitroglycerin or a nitrite produces a dilatation of the arterioles of the body, and consequently a fall in the arterial tension, and there results a more rapid and a less efficient systole.

The therapeutic indications for either of these two drugs are perfectly clear: Strychnin is indicated when there is a low blood pressure, a rapid heart and a bounding and easily compressible pulse; nitroglycerin is indicated when the arterial tension is high, the heart rate slow, the pulse full and tense, and the wave very slight. In case of degenerative changes in the musculature of the heart the signs might be slightly different from the above.

The virtue of nitroglycerin in rendering aid to the heart depends on its reducing the resistance against which the systole works. For this reason it has incorrectly been said to be a cardiac tonic or stimulant.

Strychnin and nitroglycerin are directly opposed to each other in their effects on the circulation; and hence when one is indicated for its therapeutic effects on the circulation, the other is contraindicated. The former is indicated in cases of reduced and the latter in cases of increased arterial tension.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER III.

ANALGESICS AND SOPORIFICS.

Analgesics and soporifics are among the most important articles in the materia medica, and at the same time, owing to their abuse, the most harmful.

The Common Need for Analgesics.

Pain, accompanied by sleeplessness, occurs in a great variety of conditions, often with an intensity or persistencey that imperatively demands alleviation. When such a condition requires medicines for a long time there is danger that the patient will learn the name of the remedy employed and continue its use long after the actual necessity for it has passed. Certainly no other class of remedies requires more painstaking care on the part of the physician, not only in the choice of the particular agent to be used, but also in the regulation of the dose.

Individual Treatment Imperative.

The way to secure the best results in the treatment of such conditions is by acquiring an intimate knowledge of the various remedies in this class and by learning how to use them singly or in combination as may be required.

In a given case a combination of chloral hydrate and potassium bromid may be necessary, while in another the latter alone may suffice. The more dangerous chloral hydrate should never be used when the less harmful bromid will serve the purpose.[1]

If we find that scarcely any two successive patients demand exactly the same prescription consisting of but two ingredients, how very much less is the probability of finding any considerable number each requiring a "shotgun" prescription of five or six substances of widely different action, agreeing only in the one property of producing unconsciousness.

It should be obvious that the conscientious use of analgesics and soporifics demands the thoughtful selection of the remedy with the careful computation of the dose according to the necessities of the individual case—a condition manifestly impossible when one relies on complex, ready-made mixtures, with doses and indications suggested by an interested layman —the manufacturer. The greater the number of individuals who acquire such harmful habits the greater are the profits of the nostrum maker.

It is well known that the habitual use of opium, chloral hydrate, the bromids and other narcotics is widespread, but

1. Should the physician desire to use a compound mixture of chloral hydrate and potassium bromid of the bromidia type he would do well to have compounded the "Mistura Chloralis et Potassi Bromidi Composita" of the National Formulary, as follows:

℞.	Chlorali hydratis Potassii bromidi, āā.....3i-gr. xv	5	
	Ext. cannab ind. Ext. hyoscyami, āā.....gr. ⅝		04
	Aquæ q. s. ad.....3vi	25	

The chloral hydrate and the potassium bromid are dissolved in a little water and the extracts are then dissolved in the solution of the salts mixed with some powdered pumice stone, and the mixture filtered.

Each teaspoonful will contain approximately 1 gm. (15 grains) each of chloral hydrate and potassium bromid; 0.008 gm. (⅛ gr.) each of extract of Indian cannabis and extract of hyoscyamus.

The mixture should be used with caution, and it will usually be found advantageous to omit the extract of Indian cannabis.

there are few who appreciate the full extent of these practices, or in how far physicians are responsible because of the careless use of these agents, either in simple form or as an ingredient of some nostrum.

For more convenient consideration we shall divide these remedies into the opium, atropin, acetanilid, chloral hydrate and bromid groups, the first three being more properly analgesics and the last two soporifics, though no absolute distinction can be drawn between them.

The widespread use of opium and morphin for local action—injections and lotions—is based on an erroneous idea. Opium contains gum which is a demulcent, a rather expensive one, however, while its active principle, morphin, must be absorbed before it can produce its effects, which are constitutional, not local.

Official Preparations of Opium.

The importance of opium and morphin are such that their actions and uses should be carefully studied in standard works of the day, and we shall pass to the minor members of the group after enumerating the official preparations.

The danger that the patient will form the truly terrible opium habit from even a short use of this drug or of any of its derivatives should always be borne in mind, and when it is necessary to use them they should be masked. Hypodermics in pain have come to be almost synonymous with morphin in the minds of the laity. This idea should be uprooted both by the use of the method for many other substances and by avoiding it as much as possible with morphin. The odor and the taste of opium and of the tincture, unfortunately, are well known and they should be disguised if possible.

To disguise the identity of opium and its preparations it is customary with some practitioners to employ the old designation thebaica for opium: tr. thebiaca for tr. opii. The use of the deodorized preparations of opium is also to be recommended for this same purpose.

The official titles, properly coming under the heading opium, are not only numerous, but varied and important. Opium and Opium Granulatum are never used directly in the practice of medicine, but Opii Pulvis and Opium Deodoratum are frequently prescribed.

OPII PULVIS.—U. S.—When assayed, by the process given in the Pharmacopeia, this should yield not less than 12 per cent. nor more than 12.5 per cent. of crystallized morphin. This requirement is somewhat higher than the provision adopted for the International Standard, which limits the morphin contents of powdered opium to 10 per cent.

Average dose: U. S. P. powdered opium is 0.050 (50 mg. or 1 grain).

OPIUM DEODORATUM.[2]—U. S.—This is powdered opium which has been treated with purified petroleum benzin to remove the caoutchouc, wax, oil and the odorous substances that are present; the alkaloidal strength and the dose of deodorized opium are the same as for the official powdered opium.[2]

EXTRACTUM OPII.—U. S.—Assayed to contain 20 per cent. of morphin, this preparation is now little used, except in suppositories and the official emplastrum opii.

Average dose: 0.030 gm. (30 mg. or ½ grain).

PILULÆ OPII.—U. S.—This is composed of opium, 0.065 (1 grain), and soap, 0.020 (1/3 grain). These pills constitute a very ancient form of administering opium.

Liquid Preparations of Opium.

There are five liquid preparations, the least useful of which is mentioned first:

VINUM OPII.—U. S.—Containing 10 per cent. of opium in fortified white wine, aromatized with 1 per cent., each, of cinnamon and cloves, it resembles the well-known "Laudanum of Sydenham."

Average dose: 0.5 c.c. (8 minims).

ACETUM OPII.—U. S.—Vinegar of Opium, formerly known as black drop, Lancaster drops or Quaker drops, has long been known and extensively used. It contains 10 per cent. of opium and 3 per cent. of nutmeg in diluted acetic acid, sweetened with sugar.

Average dose: 0.5 c.c. (8 minims).

TINCTURA OPII.—U. S.—The Tincture of Opium is the well-known and widely used Laudanum, and consists of 10 per cent. of opium in diluted alcohol.

Average dose: 0.5 c.c. (8 minims).

TINCTURA OPII CAMPHORATA.—U. S.—This, also known as paregoric or paregoric elixir, is the only one of the compound preparations of opium now official. It is so well known as a mild anodyne and sedative that further notice is not necessary.

Average dose: 8 c.c. (2 fluidrachms). This amount contains about 0.03 gm. (½ grain), each, of powdered opium, benzoic acid, camphor and oil of anise.

The Deodorized Tincture.

TINCTURA OPII DEODORATI.—U. S.—Deodorized tincture of opium is practically a 10 per cent., aqueous, extract of opium that has been treated with purified petroleum benzin to remove the odorous and other objectionable constituents, and subsequently preserved by the addition of 20 per cent. of alcohol. This, like the simple tincture of opium, is directed to yield, on assay, not less than 1.2 per cent. nor more than 1.25 per cent. of morphin in crystals. The average dose is 0.5 c.c. (8 minims). While there has been some controversy as to who originated this particular preparation, there has never been any difference of opinion as to its possibilities and uses. From the sedative elixirs of nearly a century ago to the Scotch oats essence of the present day there have been many attempts to exploit deodorized or masked opium preparations, as harmless vegetable compounds. Another class of preparations, like "McMunn's Elixir of Opium," has been exploited as embodying some wonderful discovery in the treatment of opium.[3] The official deodorized tincture is in every way distinctly superior to all of these nostrums, because, as noted under deodorized opium, it has the advantage of economy, efficiency and reliability.

Other Preparations of Opium.

There are but three other galenical preparations of opium official in the present Pharmacopeia.

TINCTURA IPECACUANHÆ ET OPII.—U. S.—Liquid Dover's powder. This is of practically the same strength as the well-known powder of ipecac and opium.

Average dose: 0.5 c.c. (8 minims).

PULVIS IPECACUANHÆ ET OPII.—U. S.—has been noticed under ipecac (see Chapter II). It contains 10 per cent., each, of ipecac and of powdered opium.

Average dose: 0.500 gm. (7½ grains).

TROCHISCI GLYCYRRHIZÆ ET OPII.—U. S.—This has been previously noticed.

Morphin and Codein.

The alkaloids, Morphin and Codein, are of nearly as much interest as opium.

Morphin was discovered by Sertürner, a German apothecary, in 1805, and was used in medicine as early as 1820. There are four official preparations:

MORPHINÆ.—U. S.—This alkaloid, obtained frem opium, occurs as colorless or white shining rhombic prisms or as fine needles, or as a crystalline powder. It is odorless and has a bitter taste.

Average dose: 0.010 gm. (1/5 grain).

MORPHINÆ ACETAS.—U. S.—This salt of morphin should be kept in well-stoppered, dark amber-colored bottles, and a minute quantity of free acetic acid should be present to prevent decomposition.

Average dose: 0.015 gm. (¼ grain).

MORPHINÆ HYDROCHLORIDUM.—U. S.—Like the acetate, this should be kept in well-stoppered dark bottles.

Average dose: 0.015 gm. (¼ grain).

MORPHINÆ SULPHAS.—U. S.—Like the other morphin salts this should be kept in well-stoppered dark bottles.

Average dose: 0.015 gm. (1/4 grain).

2. This preparation is superior to the widely used proprietary preparation of opium "Svapnia," over which it has the advantage of economy, activity and even general reliability since the accompanying directions for assay are not alone accurate, but are readily followed by any one versed in chemical assay work.

3. "Papine" would be a gem among these if the claims made for it were true, but we can not believe that any preparation of opium "containing the pain relieving principle (which we know to be morphin) can be "a safe opiate for children under one year."

Sulphate of morphin is much the most frequently used in this country, while the hydrochlorid is generally given the preference in Europe. The acetate is the most readily soluble in water, but is quite unstable, losing acetic acid on exposure to the air, and, as the alkaloid morphin requires 3,330 parts of water for solution at ordinary temperatures, considerable care should be exercised in the use of old, and possibly decomposed, samples of morphin acetate.

While the new Pharmacopeia gives 0.015 gm. (¼ grain) as the average dose of the salts of morphin we believe that this is too high as the "average" dose.

Codein and two of its salts are official: Codeina, Codeinæ Phosphas, Codeinæ Sulphas.

Codein, in addition to being obtained from opium, is also prepared from morphin by methylation. It was discovered by a French chemist, E. Robiquet, in 1832, but was not generally used in the practice of medicine until many years later. It was admitted into the U. S. Pharmacopeia in 1880; the phosphate and the sulphate are now official for the first time. The sulphate is the form most frequently employed in this country, though it appears to be but little known abroad, where the phosphate is mainly used. The phosphate was considered under the subject of Expectorants. Codein has been considered a somewhat uncertain drug, owing to its frequent contamination with morphin, but the Pharmacopeia provides a test for its purity, and particularly for detecting the presence of the more poisonous alkaloid.

The phosphate, being readily soluble in 2.5 parts of water, is particularly well suited for hypodermic use; or it may be prescribed alone in syrup or combined with chloral hydrate or the bromids; in the latter case the mixture should be directed to be shaken before using.

The average dose of codein or of any of its salts is 0.03 gm. (30 mg. or ½ grain).

Apomorphin Free from Habituation.

APOMORPHINÆ HYDROCHLORIDUM.—U. S.—which was also mentioned under "Expectorants," Chapter 2, has been recently brought to notice as a hypnotic, in doses of 0.002 (1/30 grain). It is said to have the great advantage of not producing a drug habit.

Heroin and dionin are proprietary articles of the morphin group possessing some advantages, but they are not free from danger. The heroin habit is beginning to be common and should be carefully guarded against.

Cannabis Indica Unimportant.

CANNABIS INDICA.—U. S. AND BR. INDIAN CANNABIS is a well-known member of the opium group. It occurs in dark-green or brownish compressed masses, having an agreeable narcotic odor and characteristic taste.

It appears to have been used by the Hindoos from very early time. It was also known to the Egyptians and to Dioscorides, but it was not introduced into England until about 1835.

Average dose: 0.05 gm. (1 grain), but rarely used in substance.

EXTRACTUM CANNABIS INDICÆ.—U. S.—is an alcoholic extract reduced to a pilular consistence.

Average dose: 0.01 gm. (1/5 grain).

FLUID EXTRACTUM CANNABIS INDICÆ.—U. S.—Dose, 0.01 c.c. (1 minim).

TINCTURA CANNABIS INDICÆ.—U. S.—represents 10 per cent. of the drug extracted with alcohol. Average dose, —0.5 c.c. (10 minims).

At one time cannabis indica was supposed to have great virtues as an antispasmodic, analgesic and narcotic, and it was highly recommended by a few physicians as a vasomotor stimulant, uterine stimulant, etc. It is now but little used and there seem to be few conditions in which one of the preparations of opium could not, advantageously, be used in its stead.[4]

Other Members of the Opium Group.

Two other members of the opium group are Sanguinaria, which we have had occasion to mention elsewhere, and the feebly-acting

LACTUCARIUM.—U. S.

Average dose: 1 gm. (15 grains).

TINCTURA LACTUCARII,—U. S.—is a 50 per cent. solution of lactucarium in diluted alcohol.

Average dose: 2 c.c. (30 minims).

SYRUPUS LACTUCARII.—U. S.—is much more commonly employed, its popularity being largely due to a nostrum.

Average dose: 8 c.c. (2 fluid drams).

The Atropin Group.

The atropin group includes the crude drugs yielding the mydriatic alkaloids, such as atropin, hyoscyamin and hyoscin, or scopolamin, all of the latter being closely related chemically.

The actions of atropin and its congeners are so important and so complex that it is entirely beyond the scope of the present article to attempt anything like a complete description of them. The reader can not avail himself of this potent and important class of agents without a careful study of their pharmacologic and therapeutic actions. We shall, therefore, call attention to a few of their more important applications and contraindications without entering deeply into the reasons.

Atropin is useful as an analgesic mainly when the pain is of spasmodic origin and when the application may be made directly to the nerve ends of the affected tissues. In the pains of lead colic this may be accomplished by the internal use of one of the preparations of belladonna, preferably a pill of the extract coated with salol or keratin.

The most prominent action of atropin is seen in the dilation of the pupil, but the more rapidly acting and less enduring homatropin hydrochlorid is usually preferred for this purpose, if the object is merely to examine the eye—atropin, if it is desired to paralyze accommodation for some time, as in inflammatory conditions.

While the mydriatic effect is so similar with the different members of this group, it must be remembered that they have very dissimilar actions on the brain.

Use as Anesthetics.

The constant search for less dangerous anesthetics than ether and chloroform brings many substances into notice. Morphin and scopolamin have found an ardent champion in Korff, who has used them for several years. He employs up to 0.035 gm. (½ grain) of morphin and 0.0013 gm. (1/45 grain) of scopolamin. Unconsciousness does not occur and he claims absolute quiet must be maintained, while he stops operating long enough for pain to subside. He advises drops of chloroform or ether when necessary. The tongue must not be permitted to fall back into the throat. Its application in surgery must obviously be very limited. A discussion of a number of fatalities attending the use of morphin and scopolamin for general anesthesia will be found in *La Semaine Medicale*, Nov. 8, 1905, p. 529.

Scopola.

The crude drugs and their preparations belonging to this class are so numerous and so well known that it is hardly necessary to enumerate them. Besides Belladonna Root and Leaves, Hyoscyamus and Stramonium Leaves, a member now official for the first time, is Scopola.

SCOPOLA.—U. S.—The dried rhizone of *Scopola carniolica* (Jacquin) (Fam. *Solanaceæ*), yielding, when assayed as directed in the Pharmacopeia, not less than 0.5 per cent. of its alkaloids, has little odor and a sweetish, afterward bitterish, acrid taste. Though described by Dr. Scopoli in 1771, it attracted but little attention from the medical profession until it was used in manufacturing "belladonna" plasters.

Average dose: 0.4 gm. (¾ grain).

4. It may be worth while to notice the importance attached to the extract of cannabis indica by the makers of bromidia, who claim that their preparation is the only hypnotic that has stood the test in every country for thirty years. Since all the other constituents are very commonly used, one must infer that they consider the "genuine imported extract of cannabis indica" of exceptional value. Bromidia, it is claimed by the manufacturer, contains 15 grains each of chloral hydrate and potassium bromid, and 1/8 grain each of genuine imported extract of cannabis indica and extract of hyoscyamus, to the teaspoonful. Thus a single repetition of the dose —one teaspoonful—might prove fatal, since 30 grains of chloral hydrate have caused death; but the manufacturers advise *hourly* doses so long as may be necessary to induce sleep. The extravagant claims made by the manufacturers of this nostrum have induced many physicians to use it in preference to prescribing the several official constituents according to individual needs, and today it is offered direct to the public at cut-rate prices.

FLUIDEXTRACTUM SCOPOLÆ.—U. S.

Average dose: 0.05 c.c. (1 minim).

SCOPOLAMINÆ HYDROBROMIDUM.—U. S.—is chemically identical with Hyoscinæ Hydrobromidum U. S.

This has been used in the treatment of nervous excitement, particularly of the insane. It often induces quiet sleep at night—not usually in the day—and may also lessen sexual excitement. Atropin, on the other hand, has been used to stimulate the brain in cases of depression.

Average dose: 0.0005 gm. (0.5 mg. 1/125 grain).

Hyoscin is of Little Use as an Analgesic or Soporific.

HYOSCYAMINÆ HYDROBROMIDUM, U. S., and

HYOSCYAMINÆ SULPHAS.—U. S.—These are used very much as Hyoscin.

Average dose: 0.0005 gm. (0.5 mg. 1/125 grain).

None of the mydriatic alkaloids should be used as soporifics except in case of urgent need, as the benefits may be more than counterbalanced by the disadvantages. Hyoscin and hyoseyamin are of little use directly in relieving pain; hence, they can hardly be considered as analgesics.

Any of these alkaloids may be given alone as tablet triturates or as compressed tablets, hypodermically or alone in aqueous solution.[5]

R.	Tincturæ belladonnæ fol.		
	Tincturæ lobeliæ, of each	℥ii	10
	Spiritus ætheris nitrosi, q. s. ad.....	℥iii	100

Of this a teaspoonful is given every hour or two until relief is obtained.

The bromids of ammonium, sodium or potassium may be used with the prescription given, but in that case adjuvant or aromatic elixir should be substituted for the spirit of nitrous ether, and, as in every case when bromids or iodids are combined with alkaloids, the mixture is directed to be shaken.

The extracts of the crude drugs are much to be preferred to the alkaloids as additions to purgatives, since the latter would be largely absorbed from the stomach, whereas the local action on the intestine is desired.

(To be continued.)

Clinical Notes

AUTOMOBILE FRACTURE OF THE LOWER RADIAL EPIPHYSIS IN A SEVENTEEN-YEAR-OLD BOY.

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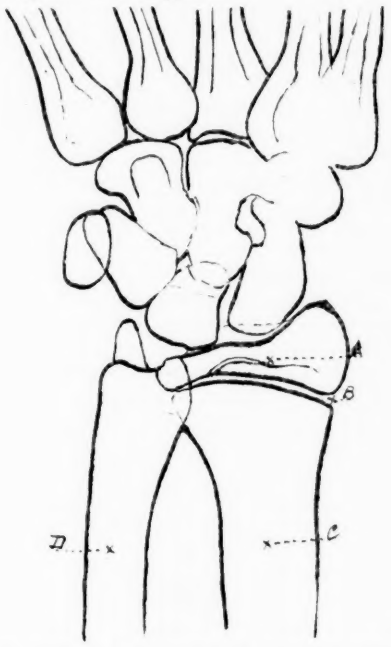
CLEVELAND.

The following case is of interest on account of the method of occurrence of the fracture, its location and the absence of deformity which resulted. Inquiries of different surgeons indicate that automobile fractures in themselves are much more common than a search through the literature would indicate. Ghillini[1] has reported the only similar case that I have been able to find.

Patient.—H. P., a 17-year-old boy, was first seen on Sept. 30, 1905. He gave a history of having broken his nose when 2 years old and of breaking his ankle four years ago in a hockey game.

History of Injury.—Three hours before I saw him he was trying to start the engine of a 40 horse-power automobile, when the crank snapped back.[2] His right hand, which at no time left the crank handle, was quickly and violently forced upward, and he experienced severe momentary pain in his wrist, which was followed by a dull ache. He was positive that his hand grasped the handle firmly during this time.

Examination.—This showed a moderate degree of swelling on the flexor side of the carpus and lower radius and ulna. There was marked tenderness over the lower end of the radius, and the voluntary motion of wrist and fingers was limited. There was no apparent deformity and crepitus was not obtained. Owing to the absence of deformity, an examination under ether was not made. The provisional diagnosis of separation of the lower radial epiphysis was made. Anterior and posterior splints were applied.



Fracture of lower radial epiphysis (tracing from *x*-ray plate by Stern). A, Line of fracture; B, line of epiphysis; C, radius; D, ulna.

The next day a Roentgen ray exposure showed that the parts were in normal position, but that there was a crack in the lower radial epiphysis. By that time the wrist was considerably broadened through swelling, and the point over the fracture was extremely tender. Routine treatment was followed.

A CASE OF CANCER OF THE PROSTATE (DIAGNOSED AFTER OPERATION).

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Patient.—W., aged 53, born in Ireland, foreman in tannery.

Family History.—Both parents lived to an advanced age. One brother died at about the age of 50 of an indefinite trouble with urinary symptoms.

Personal History.—The patient had the commoner diseases of childhood, had had a right inguinal hernia for 15 years, but had never had any severe sickness. No venereal history. Habits always good; never drank, and smoked only in moderation.

Present Trouble.—About September, 1904, he began to notice some frequency of micturition. This continued, and during December, 1904, he consulted a physician, who examined the urine, told him it was normal, and prescribed a diluent. The trouble continued until August, 1905, when he consulted a second physician, with the same result. At this time he had to get up on an average of every hour during the night, the interval between urinations during the day approximating normal. There was practically no pain connected with the act. He never had noticed any bleeding.

Sept. 15, 1905, I saw the patient for the first time while he was suffering from an attack of retention, associated with the incontinence of retention. A silver prostatic catheter was passed with difficulty and one pint of clear urine drawn off. Catheterization at six-hour intervals was necessary for the next twenty-four hours, and then a soft instrument was tied in and the bladder drained for forty-eight hours. After drainage was discontinued the catheter was passed three times daily until the day of operation.

Physical Examination.—Well-developed man of apparently 50 to 55 years old. Rather stout. Color good. Pupils equal

5. The drugs of this group are so often used in asthma with benefit that we suggest the following as an example of the way they may be prescribed:

1. Zeits. f. Orthoped. Chir., 1904, xiii, 759-64.

2. For an explanation of the cause see Lund's article in the Boston Med. and Surg. Jour., 1904, vol. cli, p. 481-3.

and react to accommodation, and light knee jerks lively. Lungs negative. Heart not enlarged, sounds of good character and free from murmurs. Aortic second sound slightly accentuated. Pulse of rather high tension, vessels slightly thickened. Abdomen negative, except for right inguinal hernia. Prostate as felt per rectum moderately enlarged, firm, slightly tender and not nodular. Urethral length nine inches. Residual urine 280 c.c., sp. gr. 1012. No albumin or sugar, urea 1.70 per cent., no pus, blood or casts in sediment.

Operation.—Prostatectomy was advised, and the patient entered the Massachusetts General Hospital for operation. Suprapubic prostatectomy was performed Sept. 30, 1905, by Dr. James G. Mumford, the bladder being exposed by Noble's transverse incision. The enucleation of the prostate was extremely difficult, but the patient stood it well and was put to bed in good condition.

Microscopic Diagnosis.—Cancer apparently limited to prostate.

Later History.—For three weeks after operation the patient did well, when he had a gastric upset, and the amount of urine became diminished. This apparently uræmic condition did not respond to treatment, and he died November 5. No autopsy was permitted.

In making the diagnosis of hypertrophy of the prostate in this case the possibility of its being a malignant enlargement was suggested by his age at onset and the short time elapsing before retention developed. Pain was practically absent, there was apparently complete absence of hemorrhage, and there was no weakness, much less cachexia. The latter facts were considered to be against a malignant enlargement.

The case is reported simply to put it on record because of its rarity.

SAFETY PIN SAFELY PASSED BY CHILD OF SIXTEEN MONTHS.

J. A. POSTLEWAIT, M.D.
TARKIO, MO.

In THE JOURNAL of Nov. 25, 1905, Dr. L. W. Littig reported a case of a child eleven months old who swallowed a safety pin one and one-eighth inches in length and passing it in a few hours less than five days. No inconvenience was suffered and no treatment was given. Some time since I had an experience much the same with a child sixteen months old. In my case the safety pin swallowed was one and one-fourth inches long, open, and three-fourths of an inch wide at the angle of opening. The safety pin was swallowed at noon on Saturday and on the following Thursday at 9 a. m. it was passed. The child did not suffer and no treatment was given.

New Instruments

AN IMPROVED PERIOSTEAL ELEVATOR AND SPATULA FOR SUBMUCOUS RESECTIONS.

CHARLES NELSON SPRATT, B.S., M.D.
MINNEAPOLIS.

While not desiring to add to the large list of instruments devised for submucous nasal work, the instrument as shown in the accompanying illustration has proved of such assistance to me that I think it of sufficient value to merit publication. The instrument is 16.5 cm. long. The spatula measures 15x18 mm. and is a little over 1/10 mm. thick. The periosteal elevator is 5 mm. wide. The advantages of the double curve or "S" shape are as follows:

1. The curve of the instrument fits the hand and allows a firm grasp.

2. Although the force is applied in a straight direction, the hand is out of the line of vision, as with instruments having the "nasal angle."

3. The curve to the periosteal elevator is sufficient to cause the edge to stay in contact with the cartilage or bone.

4. The spatula end can be used as a retractor for the mucous flap or to hold it against the septum in inserting the packing. In either case the hand is out of the line of sight and the field of operation is unobstructed.

THE NEED OF A NEW SCALE FOR THE CLINICAL THERMOMETER.

L. D. PEEBLES, M.D.
DENVER.

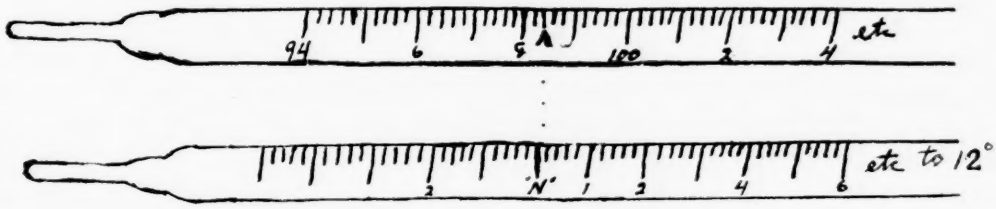
I desire to call the attention of the profession to the fact that an improvement in the means of quickly and accurately determining any deviation from the normal temperature is possible.

By the present method, when a temperature is 96.8 degrees it takes at least a little time to find that it is 1.6 degrees below normal. If it is 102.4 degrees it likewise requires more than a glance to see that there are four degrees of fever.

In the improvement that I suggest the exact amount above or below normal is at once seen, as I would have on the new scale the letter N to represent normal, which on the present scale is 98.4 degrees, and have it marked off in full degrees, with fifths above and below.

Thus a temperature of 102.4 degrees on the present scale would be exactly four degrees above normal on the new scale and could be so recorded, while a temperature of 95.4 degrees on the present scale would be exactly three degrees below normal on the new scale.

As the clinical thermometer is only used for medical purposes, I think it full time that we should have one all to ourselves.



New Scale.	Present Scale.
N represents	98.4 degrees
1 degree above represents	99.4 degrees
2 degrees above represents	100.4 degrees
3 degrees above represents	101.4 degrees
4 degrees above represents	102.4 degrees
1 degree below represents	97.4 degrees
2 degrees below represents	96.4 degrees
3 degrees below represents	95.4 degrees
4 degrees below represents	94.4 degrees

[EDITOR'S NOTE.—We agree with Dr. Peebles that his suggestion is a valuable one, but we should prefer to have the scale which he proposes added in another color to a thermometer which already had the present scale. Thus one could tell the actual temperature or the deviation from normal, as preferred. If Dr. Peebles' scale alone were on the thermometer a sum in addition would be required in order to secure the actual Fahrenheit temperature for record or for comparison with the other system. Of course, it will not be possible immediately to do away with the old system and a new thermometer should have the old scale on it for comparison.]

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, JANUARY 13, 1906.

THE TRANSMUTATION OF SPECIES IN BACTERIOLOGY.

The doctrine of the transmutation of species, of the conversion of one kind of organism into another, has always had and doubtless will long continue to have a fascination for a certain class of minds. At one time some naturalists saw nothing improbable in the metamorphosis of barnacles into geese or even of the trunks of trees into large animals. As regards lesser forms of life the doctrine of heterogenesis was almost a universally accepted scientific belief. In the early days of bacteriology the notion of transformation among such exceedingly minute organisms as bacteria found, as was natural, many adherents, and the half-understood facts and but slightly trammeled fancies put forward by Bechamp, Billroth, Naegeli and others left an indelible mark on the young science. In recent years the veteran Bastian has continued to advocate the spontaneous generation of micro-organisms out of non-living matter, and it was but yesterday that the "radiobe" was welcomed with easy credulity. DeVries' theory of mutation has seemed to some to afford support to the doctrine of transformation, although such an interpretation appears to us to be based on a misunderstanding of the nature and scope of mutations. On the whole, it is not surprising that instances of the change of one bacterial species into another should be brought confidently forward from time to time for confirmation. The view once held by a certain school of French bacteriologists regarding the transformation of *B. coli* into *B. typhosus* has, to be sure, been virtually abandoned, but belief in the fluctuating character of the species in the colon typhoid group is still active.

Recently the alleged transformation of *B. (fecalis) alcaligenes* into *B. typhosus* has been the theme of appreciative comment. Altschüler observed that when cultures of *B. coli, B. paratyphosus* and *B. typhosus* were cultivated on a sterile human placenta the two former organisms remained unchanged, but after from four and one-half to six weeks the original culture of *B. typhosus* developed a yellow growth on potato, produced alkali in litmus whey and became inagglutinable by typhoid serum.

Conversely, under other conditions a culture of *B. alcaligenes* seemed to change into *B. typhosus*. These results of Altschüler were apparently confirmed by Doebert,[1] who concluded that "the culture of our laboratory, labeled '*B. f. alkaligenes* (Petruschky)', is so changed by passage through the bodies of three guinea-pigs that it is no longer to be distinguished by the ordinary methods—culture, agglutination—from a true typhoid bacillus." Berghaus,[2] however, assistant in the same laboratory, has now ruthlessly shown that the culture with which Doebert worked was not a pure culture, but was a mixture of two kinds of bacteria. One of them was the true typhoid bacillus, the other *B. alcaligenes*. In brief, what happened in Doebert's experiments was that as a result of animal passage *B. alcaligenes* went to the wall, while *B. typhosus* survived and was isolated in pure culture at the finish. Trommsdorf,[3] assistant in the Munich laboratory, has also reached, independently, the same results as Berghaus; he concludes from a series of experiments that the typhoid bacillus and *B. alcaligenes* are "well differentiated species." This is not the first denouement of the sort in bacteriology, and the occurrence may well suggest to bacteriologists the importance of testing the purity of a culture by multiple plating or in other ways. The question naturally arises as to how far the perplexing results obtained by some investigators, for instance, those working with the pneumococcus-streptococcus group, can be attributed to cultures of doubtful purity.

1. Hygienic Institute, Univ. of Berlin.

SURGICAL ASPECTS OF FOOTBALL.

We have called attention several times to the number of deaths that take place every year from football, and have emphasized the fact that in the season just passed more than a score of fatalities were reported as having occurred. This, of course, is too large a number of fatal accidents for any mere sport. There must be something in it besides sport, an appeal to the brutal instincts of human nature, or some less worthy incitement even than this, to make young men continue to indulge in a game which is the cause of so many deaths. It has been said over and over again, however, in answer to any such arraignment of the game, that the fatal accidents take place only on minor college teams, where the men are not properly trained and hardened to stand the brunt of the necessary football severities. Serious injuries are said not to occur at the large universities. The very obvious retort would be that since the smaller colleges imitate the large universities, which are supposed to be the great centers of culture in this country, it is too bad that the example set must have such serious consequences.

As the conclusion of a recent careful medical study of the game and its attending injuries, there is, however, a much more direct and forceful answer that may be given to the objection. Dr. Edward H. Nichols and Dr. Homer B. Smith, who had the medical and surgical care of the football squad of Harvard during the past season, have given their observations and conclusions in

2. Hyg. Rundschau, 1905, 15, p. 761.
3. Münch. med. Wochft., 1905, 52, p. 1667.

an article[1] on "The Physical Aspect of American Football." We may say at once that their conclusions are entirely against the game as judged from its medical standpoint. They say that the number, severity and permanence of the injuries which are received are very much greater than is generally credited or believed. They consider a large percentage of the injuries unavoidable, and state that constant medical supervision of the game is a necessity and not a luxury. At Harvard the constant attendance of two trained surgeons is required. Furthermore, they consider that the number of injuries is inherent in the game itself, and is not due especially to close competition in big games, since the proportion of injuries received in games and in practice is about the same.

Some of the details of the report on which these conclusions are based make a very interesting surgical catalogue. Of cuts that required stitches there were 12; of fractured ribs there were 5; of dislocations of the shoulder, 2; ruptured muscles, 6; dislocated semilunar cartilages, 10; broken noses, 7; fracture of the rim of the pelvis, 4; dislocation of the acromial end of the clavicle, 11; concussion of the brain 19; fracture of cervical vertebra, 1; and middle meningeal hemorrhage, 1. A young surgeon who desired the training of an active practice in rather serious surgical injuries of very varied nature evidently could not do better than to obtain the appointment as attending surgeon to a football squad. Now that war's opportunities are lacking for surgical practice, this chance should not be forgotten. As is very well said by the authors of the report, many of the joint injuries received are of such a character as to be likely to become progressively worse, and many of the injuries to the shoulder are certain to cause some disability in later years.

Perhaps the most serious feature of these accidents is the number of concussions of the brain reported. Only two games were played during the entire season in which a case of concussion of the brain did not occur. Frequently the fact that a man had received this serious head injury was noted by the surgeon from the side lines before it was recognized by the player. At times a man thus hurt continued automatically to go through the motions of playing until his mates noticed that he was mentally irresponsible. When a condition like this develops as the result of an injury, the central nervous system has received a very severe shaking up. There was a time when it was considered that convulsions and other untoward incidents in the conscious life of the individual were not likely to be followed by serious consequences. This is not the opinion at the present time, however. One of the questions always asked by nerve specialists with regard to nervous diseases developing later on in life, is whether or not the individual ever suffered from convulsions in childhood. A state of affairs in which the individual acts as an automaton after an injury is not so different in character from a convulsive seizure. If the one is supposed to have serious consequences so may the other. At the present time no one is ready to say whether concussion of the brain may or may not have serious consequences in after life.

The whole report of the two surgeons in charge of the Harvard squad should be read by every prominent educator throughout the country, and it should be the duty of the members of the medical profession to see that it is called particularly to their attention. Surely, no one will consider after this calm exposure of the inside history of football injuries, even at a great university where no effort is spared to bring the men into the pink of condition, that football is to be considered a game without serious risks, no matter what the preparation, or that it is to be compared with any of the other sports in this matter of liability to serious injury. An attempt has been made to gloss over football's worst aspects by widely published suggestions that no game is entirely without the danger of death under accidental circumstances. In football, however, as the Harvard surgeons emphasize, the injuries are absolutely dependent on the present methods of playing the game itself, and are bound to occur. The fact that 145 injuries, for that is the total of the Harvard record, the least of which were cuts—twelve in number requiring stitches—occur in one season of play is of itself enough to stamp the game as something that must be greatly modified or abandoned if we are to be considered a civilized people, and if our universities are to be considered centers of influence for good. The additional conclusion in the report that the game as now played encourages weight too much at the expense of nervous energy to be really athletic, should be its death knell in its present form unless our university authorities fear unpopularity more than they dare to be right.

1. Boston Med. and Surg. Jour., Jan. 4, 1906.

THE SPIROCHÆTA PALLIDA.

As further reports concerning this protozoön appear, it becomes more possible that Fritz Schaudinn and Erich Hoffmann, the discoverers of the *Spirochæta pallida*, have found the micro-organism that causes syphilis. Schaudinn and Hoffmann have contented themselves, however, with merely stating that this parasite is found constantly in all syphilitic lesions of the secondary stage, and do not assert that it therefore produces the disease.

Since their first report last May, the *Spirochæta pallida* has been found in various syphilitic products by more than 100 observers, and the amount of literature that has appeared is proof of the interest aroused in the subject. As Koch had to face the assertion that the tubercle bacillus was merely a fat crystal, so Schaudinn and Hoffmann had to meet the argument that their spirochete did not differ from the common ones already known to bacteriologists, and that the micro-organisms had merely grown in the staining fluid as a culture medium after its accidental contamination. Their convincing description of their work, however, soon silenced

such trivial opposition, and since then confirmations of their findings, accompanied in many instances by micro-photographs, have been pouring in.

The *Spirochæta pallida* is not a fission fungus, but is of animal nature, an animal micro-parasite or protozoön of the group *Flagellata*. In contrast to this, the well-known spirilla, which resemble it in form, are vegetable parasites. The form of the *Spirochæta pallida* is that of a very thin, corkscrew-like thread with regular, numerous spirals, deep and close together. The pallida is the smallest of the spirochetes. Its length varies from 4 micro-millimeters to 20 in exceptional cases. It is probable that such long specimens are produced by end-to-end apposition of several individuals. The thickness of the *Spirochæta pallida* varies from immeasurable slenderness to one-fourth of a micro-millimeter. At each end of the organism there is a slender, straight, hair-like flagellum, and some of the micro-parasites have two of these at one of the poles. The *Spirochæta pallida* is capable of various motions. One of these is of a screw nature, the animal rapidly rotating on its axis in one direction and then reversing the motion. There are also bending, sinuous and whip-like movements of the entire body. The motions persist even after six hours in physiologic salt solution. No cultures have been obtained so far from any type of spirochete.

The *Spirochæta pallida* is very difficult to stain and after staining appears much more faintly colored than the common varieties of spirochetes. The stain employed by Schaudinn and Hoffmann is Giemsa's eosin azure solution. H. Ploeger has also succeeded in staining it with a one-minute immersion of the slide in a 10 per cent. concentrated alcoholic solution of gentian violet with 2.5 per cent. of carbolic acid. The parasite may be seen with an oil immersion lens and magnifying power of 800 diameters.

In balanitis, scrofulous abscesses, papillomata and the scrapings from carcinoma spirochetes have been found that resemble in appearance the *Spirochæta pallida*. These common forms, however, possess an undulating membrane, readily seen as a shadowy outline, and they are usually much coarser than the pallida. The spirals flatten when they are at rest, while those of the *Spirochæta pallida* are preformed and constant. Though exceptionally slender, forms of these common spirochetes may resemble the pallida; they are always mingled with the coarser specimens of the micro-organism, while the *Spirochætæ pallidæ* exist in pure culture in syphilitic tissues. The *Spirochæta pallida* has been found in the deeper layers of primary lesions, in fluid extracted from syphilitic inguinal glands, in secondary papules, in the blood of the spleen at the time of the syphilitic roseola and in the spleen of a child who died of congenital syphilis. Nearly pure cultures have been found in the fluid from syphilitic pemphigus blisters. Metschnikoff inoculated an ape with syphilis and found the *Spirochæta pallida* in the primary lesion produced. The micro-parasite has never been demonstrated in the tertiary products of syphilis. The *Spirochæta pallida* is difficult to see, so that practice is required before it can be readily found in specimens examined. Further research, perhaps extending over years, will be needed to establish it as the micro-parasite that causes syphilis or to disprove its claim to such distinction. Meanwhile, the number of those studying it is on the increase and interesting developments are to be expected.

THE APPENDICES EPIPLOICÆ AS A CAUSE OF ABDOMINAL DISEASE.

It would almost seem that the enormous number of abdominal operations which are now done each year would have made us acquainted with not only the most common but also the most uncommon intra-abdominal lesions. That this is not entirely the case is shown by the cropping up, from time to time, of conditions which are not mentioned in the ordinary textbooks and are often but barely noted in the literature. At first sight some of these conditions seem so unusual and bizarre that we are apt to regard them as mere medical curiosities, and to think of them as conditions which may be left to the consideration of the diagnostic hair-splitter, but which have no great interest for the practical physician. The history of many of these apparent medical rarities shows, however, that, once pointed out, they become more and more common, and the publication of a single case is often followed by a veritable avalanche of reports of a similar nature.

The lesions which may be produced by changes in the appendices epiploicæ have as yet received but little attention, and it is hardly realized that they are probably not so very uncommon. A year ago Rixford[1] called attention to the clinical aspects of inflammation of these bodies, and more recently Riedel[2] has reported the results which may follow their elongation and detachment. In case of inflammation the symptoms produced usually simulate those of a mild attack of appendicitis, but differ from the ordinary case in that the localizing symptoms are on the left instead of the right side. Very often there has been antecedent constipation over long periods, and attacks of left-sided pain and tenderness with nausea and perhaps vomiting may have recurred at intervals.

The conditions which may result from the elongation of the appendices are either the production of intestinal obstruction from the mechanical action of the bands so formed or the detachment of the free and often enlarged end of the involved appendix epiploicæ which is then present in the peritoneal cavity as a free body. More rarely an elongated appendix may become part of the contents of a hernial sac, become twisted and give rise to the symptoms of a strangulated hernia. In the cases in which intestinal obstruction is produced the symptoms are those usually associated with this condition, and it is, of course, impossible to make a diagnosis be-

1. California State Jour. of Med., II, No. 10.
2. Münch. med. Wochft., III, No. 48.

fore operation. The free bodies in the peritoneum may give rise to symptoms suggesting gallstones, recurrent attacks of pain and sometimes slight jaundice, or appendicitis may be simulated. In some instances a fatal peritonitis has been produced.

The explanation of the production of such marked symptoms by such small and apparently innocuous masses of fat is difficult, and the symptoms do not correspond at all to what we should expect from our knowledge of the resistance of the peritoneum. In one instance Riedel was able to cultivate the colon bacillus from the interior of such a free, fatty body, which showed every evidence of having been in the peritoneal cavity for some time. It is, of course, possible that the bacteria entered from the intact intestine, a process which might be rendered more easy by association with false diverticula, which are not uncommon in connection with changes in the appendices epiploicæ. Riedel's article in particular shows that these structures give rise to intra-abdominal conditions much more frequently than has hitherto been supposed, and we may expect that such cases will assume greater importance in the future.

RECIPROCITY BETWEEN NEW YORK AND NEW JERSEY.

In this issue[1] will be found the rules regulating reciprocity between New York and New Jersey. The examining and licensing boards of these states met last October and compared their methods of procedure as regards the licensing of physicians. After a full discussion they adopted the rules as published and recommended the amendment of the laws in one or both states, thus doing away with a number of minor differences now existing. This is a step in the right direction. Such adjustments should be made in the various states until there is a single standard regulating the practice of medicine in this country to displace the present chaotic conditions in which each state has a standard of its own.

MEDICAL STUDENT REPUTATIONS.

There have recently occurred among medical students class rushes and fights such as take place from time to time in literary colleges, and they are certainly a discredit to the alleged maturity and common sense of professional students. Such happenings are sometimes condoned in undergraduates of literary colleges on account of the immaturity of the participants; in any case no sensible person wishes to repress a proper youthful spirit of fun, but there should be a line drawn, beyond which no student dare go without summary action by college authorities. When one has attained the years which are supposed to be of discretion and suitable for the higher professional studies, and when one is a candidate for—or one might almost say member-elect of—an honorable profession it is time to have regard for reputation. The reputation of medical students is one of which every respectable medical man is ashamed, and those in charge of medical colleges are responsible for it to a large extent. Every well-wisher of the profession will echo the sentiments of Dr. Roswell Park, who, because of the street fights by Buffalo professional students, wrote to the student fraternities urging them to remember that their members already bear some responsibilities as men and members-elect of various honorable professions.

1. Department of "State Boards of Registration," page 142.

A SUBSTITUTE FOR THE OYSTER.

The importance of the oyster as a food and as a factor in the etiology of typhoid fever render a possible substitute for it of medical interest. The abalone[1] is a giant snail, weighing from one to two pounds, living in practically unlimited quantities in the deep waters of the ocean, and easily gathered along the entire coast of central and lower California. The flesh is a nutritious and wholesome article of food, highly esteemed by the Chinese and Japanese, but as yet very little used in the United States outside of California. The drying process and the original canning method yield a tough product, but a process has recently been discovered by which these giant snails can be canned and made as delicate as the oyster. They are used in a similar way for food, but have the decided advantage over the oyster that when gathered the viscera can be detached from the muscular parts by the single stroke of a knife. The source being on less populated coasts, offers less danger of typhoid contamination than does that of the oyster, and, further, we understand that there is no necessity for fattening the abalone in creeks, as is the case with the oyster. These points are in favor of the new mollusk and seem to give it large possibilities as a food product.

ALLEGED INFIDELITY OF PHYSICIANS.

A clergyman, officially high in his denomination, publishes some statements in a religious paper[2] that are —to say the least—misrepresentations. He begins by saying that the majority of physicians are infidels in the proper sense of the word, and of medical students he says that "a more ribald, obscene and godless set of young men is not to be found." Later in their careers he practically charges them with habitually lying to their patients; and says that the deteriorating effects of this, with the influence of materialistic views, the habit of neglecting religious worship (which, he says, is general among them), and the constant association with suffering, sickness and death, make them calloused and hardened and non-religious if not actively irreligious. He claims to have been a medical student, and doubtless can speak for himself at that stage of his career, but this does not justify him for slandering the whole class at the present or at any other time. His knowledge of modern medicine is evidently not great, for he says that after 6,000 years of study of the human body the medical profession is unable to explain the use of its largest organ, the liver. His quotation of Sir William Gull, whom he represents as saying that he was correct in only 66 per cent. of all his diagnoses, is, without its context, unjust to that eminent practitioner, who must have made

1. Scientific American, Dec. 16, 1905.
2. Church Standard (Episcopal), Philadelphia, Dec. 23, 1905.

the remark with many qualifications and reservations, if he made it at all. The clergyman asks if this is so "what would be the proportion of correct diagnoses of the ordinary physician?" Certainly, for all practical purposes, much better than the above figures, even with the very "ordinary practitioner." The motive of the article seems to be a sort of clerical jealousy of the physician and the magnification of the healing value of the ministrations of the spiritual adviser. We regret to have to make a criticism of a clergyman, for we believe that he represents in these views very few of his colleagues. No honorable physician would wish to deprive his patients of any benefit he can obtain through the ministrations of religion and its representatives. Physicians are not non-religious as a class, however apparently irreligious some of them may be, and it is not at all becoming for a clergyman high in his church to exaggerate or to try to widen the breach that he imagines exists between his own and the medical profession.

SUTURE OF THE DIVIDED SPINAL CORD.

The extraordinary advances that have been made by modern surgery are nowhere better exemplified than in the treatment of certain disorders of the nervous system, especially those of traumatic origin. In numerous instances life has been saved by timely operation for the relief of pressure from fractured or depressed bone or for the control of hemorrhage from a lacerated cerebral blood vessel. Less frequently similar results have been obtained in the case of comparable lesions affecting the spinal cord. On the basis of the experience already gained there is good ground for hope of further brilliant accomplishment as a result of surgical endeavor in this direction. A case in which the spinal cord severed by a bullet has been successfully sutured has been placed on record by Drs. Francis T. Stewart and R. H. Harte, and a second case of similar nature has recently been reported by Dr. George Ryerson Fowler.[1] The patient was a clerk, 18 years old, who was shot in the back with a 38-caliber revolver, the bullet entering the body at a point one and one-quarter inches to the right of the median line on a level between the tenth and eleventh dorsal vertebræ. He suffered severely from shock and immediately exhibited paralysis of the lower extremities, with loss of sensibility up to the level of a line one inch above the crests of the ilia behind, and midway between the symphysis pubis and the umbilicus in front. There was loss of control of sphincters of bladder and bowel, without cognizance of movement of the bowels; and muscular twitching in both legs and especially in the toes. Operation was decided on, and on removal of the laminæ of the tenth, eleventh and twelfth dorsal vertebræ the cord was found divided, with the bullet lying transversely between the extremities and concealed from view by a large clot of blood. Bullet and clot were removed and the cord was united by means of three fine chromicized catgut sutures. The further surgical course of the case was uncomplicated and there was some diminution in anesthesia, but the motor palsy and the loss of control of sphincters persisted. The two cases reported demonstrate the wisdom of prompt surgical intervention, even in cases heretofore considered hopeless, and they further constitute evidence of at least a certain power of regeneration or at any rate of union on the part of the divided spinal cord.

1. Annals of Surgery, October, 1905, p. 507.

RAILROAD CO-OPERATION IN PROPHYLAXIS.

It is a common rule among the railroads of this country that employés must not drink liquor while on duty, but it is not so common to find the railroads making provisions for their employés which shall lessen the desire to drink. A foreign exchange announces that the Prussian authorities, in enacting rules of this kind, have made arrangements to aid their employés by providing at accessible points good drinking water and boiling water for the making of coffee; and, further, at places where many men are gathered, cafés are to be installed where non-alcoholic drinks can be obtained at low prices. This is a very commendable work and is carried on to a limited extent in this country. As one means to this end, the branches of the Young Men's Christian Association are aided by the railroads as a means of keeping employés in good surroundings. These contributions are commonly charged to the head of betterment of equipment. The president of one of the largest lines in the country has publicly announced that of all the items under the head of "betterment" in the expenses of his road, the greatest returns are received from the subscription which his road makes to the maintenance of Young Men's Christian Association branches. The suggestion as to co-operation with employés in carrying out various rules as to conduct and habits will be of value to superintendents of hospitals and nurses' training schools, medical college deans and others. The keeping of rules of conduct may be favored by the conditions which surround those concerned and which too often are disregarded by the authorities who could better them.

UNWISE ATTEMPTS AT CLIMATIC TREATMENT OF TUBERCULOSIS.

The value of climatic treatment of tuberculosis may be largely or wholly destroyed by the absence of other details of treatment which are considered by many no less important. We recently called attention to the protest of New Mexico physicians against the migration to that state of consumptives without means of support. Unable to secure employment in a market already glutted with others like himself, the consumptive soon finds himself living in poor quarters, eating scanty and cheap food, worried by his future prospects and with very little possibility of improvement in health. Whatever climate can do for such a person is certainly effected in spite of immense odds. During the recent Tuberculosis Exhibition in New York City, the Committee on the Prevention of Tuberculosis of the Charity Organization Society sent a letter calling attention to these facts to the physicians of New York City. The profession of the whole country needs to be reminded again that the removal of a consumptive to another climate will defeat its own aims unless the sick one has means to pay his expenses or has secured in advance an arrangement for his support.

Medical News

ILLINOIS.

Chicago.

Personal.—In honor of his seventieth anniversary, a dinner was recently given Dr. Isaac N. Danforth by the Therapeutic Club.

Cornerstone Laid.—The cornerstone of the new Englewood Union Hospital was laid with elaborate ceremony, December 3. H. C. Staver presided, and Dr. A. P. Foss placed the stone in position. The new building will cost about $85,000, will be five stories in height, fireproof and equipped in accordance with the most advanced views.

Children's Hospital Society.—At the annual meeting of the Children's Hospital Society Dr. Frank Billings was re-elected president, and Dr. Frank S. Churchill was elected secretary. The president in his address announced that since the organization of the society beds in children's wards in various hospitals of Chicago had increased from 290 to 450. It was proposed to establish tent sanatoria in all the small parks for the children of working mothers, where specially prepared milk might be obt ined. The most important work for the society just now is to arouse public interest in the proposed children's hospital for infectious diseases.

Physicians Notified.—Notices have been sent to 3,800 physicians of Chicago, by the Department of Health, calling attention to the new law which provides that every physician who attends any person having a contagious or epidemic disease, such as cholera, yellow fever, scarlet fever, diphtheria, typhus, typohid fever, smallpox, varioloid, puerperal fever, membranous croup, measles or whooping cough, shall report cases within twenty-four hours, giving the name of the patient and a description of the disease. A fee of 10 cents is allowed for every report, and a penalty of from $10 to $200 may be imposed for failure to obey this law.

IOWA.

Endows Bed.—John Norton of Fort Creek, Neb., has given $1,000 for the endowment of a bed in the Jennie Edmundson Memorial Hospital, Council Bluffs.

Objects to Publicity.—Woodbury County Medical Society, at its last meeting held in Sioux City, adopted resolutions that no member should allow his name to appear in the lay press in connection with any case or in any interview on medical subjects.

Personal.—Dr. Fred P. Bellinger, Council Bluffs, has left for the far East, via Japan. He hopes to reach Thibet.——Dr. N. W. Nesmith, Waukon, has gone to Pensacola, Fla., for the winter.——Dr. an . Mrs. Charles C. Bradley, Manchester, have gone to Southern Pines, N. C., for the winter.

County Society Election.—The Medical Society of Chickasaw County met in New Hampton, December 4. The following officers were elected for the coming year: President, Dr. Edwin N. Johnston, Fredericksburg; vice-president, Dr. L. M. Taylor, Fredericksburg, and secretary, Dr. James F. Torpey, New Hampton.

MARYLAND.

Hospital Report.—The Emergency Hospital, which is conducted under the auspices of the Frederick County Medical Society, in its second annual report, shows that 379 patients were treated, of whom 204 were surgical cases, with one death after operation, and a total of nine deaths in the hospital. There were 138 free and 122 part-pay patients. The Board of State Aid and Charities made no recommendation for legislative appropriations to this hospital, speaking of it as "somewhat limited in scope."

City Insane in State Hospitals.—There are 40 more insane patients being cared for by the city now than a year ago. On January 1 there were 1,334 such patients, of whom 720 were in state hospitals, 249 in Mount Hope Retreat and 365 in Bayview (city almshouse). For each of these the city pays annually $150 to the several hospitals; but it was reimbursed by partial payments to the extent of about $12,000 during 1905. In their report the supervisors "hope that the policy adopted by the state in 1904 of taking over the care of all indigent insane patients will be vigorously carried out."

Baltimore.

Left Large Estate.—The estate of the late Dr. George W. Miltenberger amounted to nearly $250,000, of which $50,000 was in real estate.

Births and Deaths.—There were 201 deaths and 406 births reported for the week ended January 6. There were 35 deaths from pneumonia and 23 from consumption. Six new cases of smallpox were reported.

Refused Vaccination.—Eleven members of the crew of the British steamer *Jessie Burns*, from England (on which there was a case of smallpox on her arrival, December 31), refused to be vaccinated on board and were brought to the jail and there forced by the police to submit.

Hospital Opened.—The Franklin Square Hospital, attached the Maryland Medical College, was formally opened January 6. Among those who took part in the ceremonies were Bishop William Paret, Governor Edwin Warfield, Mayor Timanus, Dr. James Bosley, health commissioner, and State Senator J. Charles Linthicum. The improvements cost about $50,000. The building, as remodeled, is 84 by 100 feet, and the capacity is about 100 patients. Dr. Joseph H. Branham is president of the board of directors.

Reception to Dr. Osler.—Dr. William Osler reached Baltimore from Canada, January 5, and took up his quarters at the Johns Hopkins Hospital as the guest of Dr. Hurd. A reception was tendered Dr. Osler on the evening of January 6, in the rotunda of the hospital, members of the faculty, the house physicians and medical students attending. January 23 he will deliver an address before the Maryland Association for the Relief and Prevention of Tuberculosis, at Annapolis, in advocacy of a state tuberculosis hospital.

Personal.—Dr. William H. Welch has been notified of his election as president of the American Association for the Advancement of Science at New Orleans, January 1.——Dr. Alfred Dohme sailed for Bremen, January 5.——Dr. Howard D. Lewis has been appointed health warden and vaccine physician of the Twenty-second Ward, to succeed Dr. Albert T. Chambers, resigned.——Drs. Robert T. Wilson, Hiram Woods and H. A. Bond have been elected members of the board of trustees of the Female House of Refuge, the latter being made secretary of the board.——C. A. Emerson, Jr., has been elected chemist and bacteriologist to the sewerage commission.

MASSACHUSETTS.

Cremations Increase.—The Massachusetts Cremation Society reports that the number of cremations during 1905 was 225, as compared with 211 the previous year. Among the cremated was the body of Dr. James R. Chadwick, who was president of the society.

Epileptic Hospital Report.—The Massachusetts Hospital for Epileptics reports that during the year 618 patients were cared for at an average weekly cost of $4.56 per capita. Of the sane patients 12 were discharged much improved, 10 improved, 13 not improved and 11 died. Of the insane, 1 was discharged recovered, 1 much improved, 5 improved, 2 not improved, and 13 died.

Tuberculosis Control.—The Boston Association for the Relief and Control of Tuberculosis reports that during the last year its visitors instructed in their homes 716 patients; a day camp at Parker Hill was maintained during the summer months, at which 128 patients were cared for, and largely through their efforts the tuberculosis exhibit in Horticultural Hall was made possible.

Recommends Inspection of School Children.—In his message to the Massachusetts legislature Governor Guild recommended a more general medical inspection of school children, especially for the discovery of infectious diseases and physical defects of eyes, ears or spines. He also called attention to the need of more accommodations for feeble-minded children, of whom a thousand have been refused by the institution at Waltham during the last six years, for lack of space.

Tuberculosis Exhibit a Success.—The tuberculosis exhibit has been most successful. On several days more than 2,500 people visited it, and the interest increased up to the last day, January 7. As a result of the interest developed the new mayor of Boston, John F. Fitzgerald, has taken the first definite steps toward the provision of adequate hospital accommodations for those afflicted with this disease. One hundred and fifty thousand dollars was appropriated several years ago, but Mayor Collins insisted that this amount was insufficient. The present plan is to establish a board of unpaid trustees, to purchase land—an excellent site has already been selected—and to erect temporary or inexpensive buildings. These have been proven to be entirely satisfactory in other tuberculosis hospitals. At present Boston provides only 50 beds for such patients and these are at the hospital on Long Island.

The Brigham Beneficiaries.—Twenty-two charitable organizations received on January 1 their annual payment of $1,000 each from the estate of Robert B. Brigham. They are: Massachusetts Charitable Eye and Ear Infirmary; Boston Associated Charities; Boston Dispensary; Boston Provident Association; Channing Home for Consumptive Women; Children's Hospital; Children's Mission to the Children of the Destitute; City Missionary Society; Home for Aged Men; Home for Aged Women; Massachusetts Infant Asylum; New England Home for Little Wanderers; Hope for Aged Colored Women; Warner Home of St. Albans, in Vermont; Burnap Free Home for Aged Women; Home for Aged Couples; Boston Children's Aid Society; Boston Home for Incurables; Perkins Institute and Massachusetts School for the Blind; Massachusetts Society for the Prevention of Cruelty to Children, and the Boston Lying-in Hospital. The estate is rapidly increasing, and soon the land purchased on Parker Hill, Roxbury, will be used for the great Brigham Hospital for Incurables. The site is one of the finest in Boston, and the plans for the hospital are partly formulated. Much effort has been made to have this institution wholly or chiefly for the consumptives of Boston, but it is not likely that such a plan will be adopted.

MICHIGAN.

Tri-State Meeting.—The Northern Tri-State Medical Association of Michigan, Ohio and Indiana met in Detroit, January 9, in the Convention Hall of the Hotel Cadillac.

College Officers Elected.—At the annual meeting of the Michigan College of Medicine and Surgery, Detroit, Dr. Hal C. Wyman was re-elected president for the nineteenth time. Dr. Dayton Parker, vice-president, and W. P. Holliday, secretary and treasurer.

Not the State Hospital.—Dr. Blanch N. Epler, Kalamazoo, calls attention to an item in THE JOURNAL, December 16, regarding the Kalamazoo Hospital, and states that this institution has no connection with the State Hospital for the Insane, which is also located in Kalamazoo, and which has recently completed a ward at a cost of about $60,000.

Personal.—In memory of the late Dr. Louis Golston, Houghton, a memorial room in the new hospital at Kalamazoo is to be dedicated to his memory.——Dr. Beverly D. Harison, Sault Ste. Marie, has moved to Detroit.——Dr. J. C. Anderson, Grand Marais, has been re-elected physician of Alger County. ——Dr. Lucy M. Eames, Muskegon, has been appointed pathologist to the Hackley Hospital in that city.

Medical Aspect of the Social Evil.—Under the auspices of the Wayne County Medical Society, a meeting was held in Detroit, December 18, to bring to the attention of laymen and physicians the dangers arising from venereal disease and the social evil. About 450 were present. The following excerpts will show the trend of discussion.

DR. WILLIAM J. HERDMAN, Ann Arbor: "So grave is this danger that our physical, social, moral and educational forces must be mustered to combat it."

DR. C. B. BURR, Flint: "No more vicious aphorism ever gained foothold in the English language than that every young man must sow his wild oats."

DR. HENRY O. WALKER, Detroit: "Gradual education along the lines of the dangers surrounding them should be advanced to the young."

DR. FLEMMING CARROW, Ann Arbor: "Although we have had a statute on our books for over six years, making it a felony for not reporting cases of these diseases, not one case has been reported to the state authorities."

DR. J. HENRY CARSTENS, Detroit: "Thorough education and the publication of the symptoms would prove effective means of prevention."

DR. ALBERT E. CARRIER, Detroit: "We don't begin to realize the danger to the community. It is about time we woke up to this danger."

DR. DENSLOW LEWIS, Chicago: "It is criminal not to inform your children of the dangers that beset them."

DEAN HUTCHINS of the Law Department of the University of Michigan: "It is a terrible evil that should arouse all citizens. It is not confined to any one class. It should be fought very largely through our educational system."

RABBI LEO M. FRANKLIN: "It is a social problem, rather than a problem of the individual. If the pulpit is to count for anything it must touch the practical problems of life."

DR. VICTOR C. VAUGHAN, Ann Arbor: "There are more good people in this world than bad, and when they pull together they can accomplish anything."

At the close of the meeting, Dr. William J. Herdman introduced a resolution, which was adopted, calling for the appointment by President Carrier of the Wayne County Society, of a committee of six, who in turn will select a committee of twenty from all over Michigan, whose duty it will be to organize a state society to carry on the work.

NEW JERSEY.

Vital Statistics of the State.—The annual report of the State Board of Health shows a continued increase of marriages per 1,000 inhabitants for six years, from 1898 to 1903. There was a slight falling off in the rate in 1904. The rate last year was 13.38 per 1,000. The death rate per 1,000 increased to 17.14.

Camden Vital Statistics.—The report of the Division of Vital Statistics of Camden for the year just ended shows that there were 1,652 births, 1402 deaths and 2,338 marriages. This shows an increase of 469 marriages over those of last year. There was also an increase of more than 300 births and a decrease in the number of deaths of 130.

Personal.—Dr. Emma M. Richardson of Camden was seriously injured in a trolley collision, December 22.——Dr. William F. MacLennan has been chosen city physician of Gloucester City.——Dr. E. L. B. Godfrey, Camden, secretary of the State Board of Medical Examiners, has been operated on for appendicitis in Pasadena, Cal. Dr. and Mrs. Godfrey left Camden about six weeks ago to spend the winter in California.

NEW YORK.

For Incubator Infants.—Senator Brackett has introduced a bill prohibiting the exhibition of infants during incubation.

State Charities.—Governor Higgins, in his annual message, said that there had been steady progress of the state in its management of charities. More patients had been discharged from the state hospitals for the insane as recovered than in any previous year. The net increase of the state hospital population has been the lowest for any one year for the past fifteen. The census shows that in no other state of the union is such generous provision made for the care of the sick poor. Charitable institutions and hospitals for the insane cost the state about $8,000,000 annually. The Craig Colony for Epileptics is in need of a large new building, and provision should be made for its construction. A commission has been appointed to inquire into the most practical methods of providing modern prison buildings.

Buffalo.

No New Marine Hospital.—Because of the non-approval of the secretary of the treasury the intention to build a United States Marine Hospital at Buffalo at an estimated cost of $125,000 has been abandoned.

Isolation Hospital for Children.—With the bequest of the late Dr. De Villo W. Harrington of one-half of his estate, amounting to $1[illegible].00, the managers of the Buffalo General Hospital intend to build a modern children's hospital for contagious diseases.

Widal Tests.—Beginning January 1 the department of health has added the Widal test of the blood in suspected cases of typhoid fever to its laboratory work. These examinations are free. A specially designated Widal outfit is used and may be obtained at any police precinct station house in the city.

Personal.—Dr. Harry Gaylord and wife have gone on an extended trip to Jamaica.——Dr. Duncan A. Carmichael has assumed charge of the United States Marine-Hospital at Buffalo, vice Col. Cyrus T. Peckham, deceased.——Dr. L. Bradley Dorr has been elected president of the East Side Business Men's Association; Dr. Peter W. Van Peyma is also a member of the executive committee.

New York City.

Personal.—Dr. and Mrs. Eugene Fuller arrived on the *Minneapolis*, January 2.

Low Death Rate.—The death rate for the week ended December 30 was 18.03 per 1,000, as against 19.43 in 1904. Measles showed an increase. Bright's disease increased from 121 in the last week of 1904 to 143 in the last week of 1905.

The Yerkes Will.—This document directs the trustees of the Yerkes galleries to purchase a proper plot of ground in the borough of the Bronx, and cause proper buildings for a hospital to be erected thereon, the aggregate cost of such ground and buildings not to exceed $800,000. The income arising from another portion of the estate, which will amount eventually to more than $7,000,000, is to be used for the maintenance of the hospital, which is to be opened to the public without regard to race, creed or color. Eventually the Yerkes Hospital will receive the shares of the estate set aside for the use of the son and daughter.

Officers of the Neurological Society.—The New York Neurological Society has elected the following officers for the year 1906: President, Dr. Joseph Fraenkel; vice-president, Dr. Adolph Meyer; recording secretary, Dr. Edwin G. Zabriskie; treasurer, Dr. Graeme M. Hammond, and corresponding secretary, Dr. Frank M. Hallock.

Absolute Power Over Milk Supply.—In the decision handed down in the Lieberman case in the United States Supreme Court it is stated that absolute power over the milk supply of the city is vested in the commissioner of public health. The handicap under which the department struggles is lack of funds. The board of estimate has allowed no more for this work during the coming year than for last year.

Needs of the City.—In his message Mayor McClellan stated that provision must soon be made by the city toward securing fresh-air homes for children and convalescents, as well as breathing space for the whole people. He especially recommended one of the beaches on the Long Island shore, and that in view of the importance of this matter to the general health of the city, the subject be seriously considered during the coming year.

Good Health of the City.—The records of the year show a marked decrease from the total number of deaths from all causes from the record of last year. There was an exception in the case of tuberculosis, where there is apparently some increase in the number of cases over former years; this increase was probably due to the fact that cases were more frequently reported. In 1905, 103,852 births were reported, as against 99,555 for the year previous. There were 73,450 deaths during the past year, as against 78,060 in 1904. The marriages reported number 42,667, while in the previous year there were only 39,436.

Report of the Charity Organization Society.—This society has just issued its twenty-third annual report from July 1, 1904, to Sept. 30, 1905. A special report of an investigation in regard to the purchase and management of food by 100 tenement-house families is of great interest. The report of the committee on the prevention of tuberculosis shows what the society is doing in this direction. The department of public charities maintained in its own hospitals during the past twelve months 3,959 patients, and paid for the maintenance of, on the average, 788 patients per month in private hospitals which care for the consumptive poor. This committe recommends as a result of its study that physicians and others do not send consumptives to the country to shift for themselves, for the reason that any scheme for the country employment of consumptives should offer facilities for the careful adjustment of work to the physical ability of each patient. This should be under medical supervision and should include instruction in the rudiments of farm work. A farm school in connection with a sanatorium would perhaps be an ideal arangement.

OHIO.

The Johnstone Estate.—The personal estate of the late Dr. Arthur Weir Johnstone, Cincinnati, is appraised at $16,354.46.

The Unfortunate.—Dr. George W. Quigley, North Amherst, has been committed to the Massillon State Hospital.——Dr. William J. Manning, Cleveland, was seriously injured in a runaway accident, December 26.

Military Notes.—Harry Hamilton Snively, Columbus, major and surgeon, O. N. G., has been appointed member of the board of medical examiners for the National Guard of Ohio, vice Major Cassius M. Shepard.——Dr. Rufus C. Pennywitt, Dayton, lieutenant and assistant surgeon O. N. G., has been commissioned captain and assistant surgeon.

Academy Election.—At the annual meeting of the Columbus Academy of Medicine, Dr. James U. Barnhill was elected president; Dr. Sylvester J. Goodman, vice-president; Dr. William C. Davis, treasurer; Dr. Charles J. Shepard, secretary; Dr. John A. Frame, censor, and Dr. John H. J. Upham, delegate to the legislation committee of the State Society. The academy presented Dr. David M. Kinsman, its first president, with a gold-headed cane.

Northwestern Ohio Physicians Meet.—At the annual meeting of the Northwestern Ohio Medical Association held in Fremont, December 7 and 8, the following officers were elected: Dr. Albert S. Rudy, Lima, president; Drs. Robert H. Rice, Fremont, and Joseph H. Huntley, Lima, vice-presidents; Edwin A. Murbach, Archbold, secretary, and Dr. William S. Phillips, Belle Center, treasurer. The association will hold its 1906 meeting in Lima.

Personal.—Dr. and Mrs. Orlando T. Maynard, Elyria, start next month for Europe and the Holy Land.——Dr. Wiley D. Hickey has been elected mayor of Leipsic.——Dr. Read L. Bell has been elected president, Dr. James M. Austin, vice-president, and Dr. Emory F. Davis, secretary of the staff of Springfield City Hospital.——Dr. Olen E. Chenoweth has been appointed surgeon of the Detroit, Toledo and Ironton R. R., at Lima.——Dr. James Cutler, Richwood, has gone to California for the winter.

PENNSYLVANIA.

Personal.—Dr. Hamilton Graham, Kennett Square, has been elected president of the local board of health.——Dr. LeRoy K. Leslie, Bareville, has been elected president of the Lancaster City and County Medical Society.

Smallpox in Tamaqua.—The smallpox situation is serious in Tamaqua. An emergency hospital has been established and the board of health has ordered, in addition, that public schools and all places of amusement, churches, etc., be closed, and that all lodges and society meetings be discontinued. Door-to-door vaccination has been ordered.

Approve of Vaccination.—The physicians of Lock Haven, with one exception, deny the report that they were opposed to vaccination and, therefore, have sent the following letter to the *Philadelphia Press* over their signatures: "We, the undersigned physicians of Lock Haven, deny that any physicians in this city are opposed to vaccination or the law governing the same. R. B. Watson, E. P. Ball, George D. Green, W. J. Shoemaker, George W. Maust, J. S. McGinniss, R. Armstrong, William Armstrong, Joseph Hayes." The compulsory vaccination law is being enforced by the authorities in Lock Haven, and 676, or more than one-half of the total number of pupils registered, have been refused admittance.

Defy Vaccination Act.—The local authorities of Waynesboro openly defied Dr. Dixon by resisting his vaccination order, and reopening the public schools January 2, admitting hundreds of unvaccinated children. The schools were closed for the holidays, but during that time nothing was done toward meeting the requirements of the compusory vaccination law. Of the 1,200 pupils enrolled it is stated that 900 are not vaccinated, and a large proportion of the parents refused to submit to vaccination. Dr. Dixon conferred with the governor, attorney-general and superintendent of public instruction, and it was decided to commence mandamus proceedings against the board to compel the members to obey the law. Attorney-General Carson said: "We are going to enforce the law. We are not going to countenance such defiance, and if the mandamus does not work, then we will proceed under the penal clause of the law."

Philadelphia.

Personal.—Dr. Andrew J. Muller was appointed an assistant medical inspector by Director Coplin in the place of Dr. Henry C. Sidebotham, resigned.

Bequests.—By the will of the late Hugh Leonard, St. John's Orphan Asylum receives $1,000.——A bequest of $5,000 to the Pennsylvania Hospital for the endowment of a free bed for a woman patient was contained in the will of the late Anne E. Peale.——A bequest of $7,000 for the Friends' Asylum for the Insane was contained in the same will, and also $1,000 to the Pennsylvania School for Feeble-minded Children, and $300 for the Methodist Church Home for Children.

Health Report.—The total number of deaths reported for the week ended January 6 aggregated 536, which compares unfavorably with 491 reported last week, and with 478 reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 19; measles, 10; diphtheria, 19; consumption, 46; cancer, 30; meningitis, 5; apoplexy, 18; heart disease, 44; acute respiratory disease, 88; enteritis, 27; appendicitis, 6; Bright's disease, 34; suicide, 4; accidents, 18, and marasmus, 7. There were 341 cases of contagious disease reported, with 46 deaths, as compared with 262 cases, with 23 deaths, reported in the previous week. There were 353 cases of measles reported and 197 new cases of typhoid fever.

New Officers.—At the annual meeting of the College of Physicians, January 3, the following officers were elected: President, Dr. Arthur V. Meigs; vice-president, Dr. James Tyson; censors, Drs. Richard A. Cleemann, S. Weir Mitchell, Horace Y. Evans, and Louis Starr; secretary, Dr. Thomas R. Neilson; treasurer, Dr. Richard H. Harte; honorary librarian, Dr. Frederick P. Henry; councilors, Drs. J. Allison Scott and Francis R. Packard.——Dr. Wendell Reber was elected chairman, and Dr. William H. Park, clerk, of the North Branch of the Phila-

delphia County Medical Society at the December meeting.—— Dr. Royal W. Bemis was elected chairman, and Dr. Cyrus C. Moore, clerk, of the Kensington Branch of the same society, at the December meeting.

Vital Statistics Registrars.—The state commissioner of health, Dr. Samuel G. Dixon, has appointed 950 local registrars for the collection of vital statistics for the State Department of Health. The appointments were made December 24, and the men will be directed to begin work on January 1, when the new state law goes into effect. The registrars will receive 25 cents for each birth and death they report. They will also receive 25 cents for each monthly report of any deaths or births for any month. They are entitled to a fee of 50 cents for each disinterment permit issued by them, the fee to be paid by the person receiving the permit. Under the law creating the bureau of vital statistics, the local registrars who fail to perform their duty may be removed by the state health commissioner, and be further deemed guilty of a misdemeanor and on conviction be punished by a fine of not less than $10 nor more than $100.

Lectures on Tuberculosis.—The lectures on tuberculosis at the tuberculosis exposition, to be held from January 22 to February 3, will be delivered by the following: January 23, Dr. Lawrence F. Flick, "The Sociological Importance of Tuberculosis"; January 24, Dr. Leonard Pearson, "State Control of Tuberculosis"; January 25, Dr. Charles Dudley, Altoona, "The Railroad in Tuberculosis"; January 26, Dr. William B. Stanton, "Tuberculosis in the School"; January 27, Dr. Howard S. Anders, "Tuberculosis in the Store"; January 29, Dr. Henry R. M. Landis, "Tuberculosis in the Workman"; January 30, Dr. Samuel McC. Hamill, "Tuberculosis in Children"; January 31, Dr. Thomas Darlington, New York City, and Dr. W. M. Late Coplin, "Municipal Control"; February 1, Dr. Charles J. Hatfield, "Address to Medical Students and Nurses"; February 2, Drs. James C. Wilson and John H. Musser, "Address to Physicians," and February 3, Dr. M. P. Ravenel, "Hospitals, Sanatoria and Dispensaries." Demonstrations on pathology will be given from 2 to 6 daily.

VIRGINIA.

Burnt Out.—A recent fire gutted the office of Dr. Barksdale Hales, Fredericksburg, causing a loss of $1,500.

Medical Colleges Not to be Consolidated.—All hope of consolidating the Medical College of Virginia with the Medical Department of the University of Virginia has been given up. At a joint meeting of the committee just held it was found impracticable at this time for the amalgamation to be consummated. While the supreme end of union has not been reached, the long-existing friendship of the two institutions has been strengthened.

South Side Meeting.—The South Side Medical Association held its tenth annual session in Petersburg. The following officers were elected: President, Dr. E. F. Reese, Courtland; vice-presidents, Drs. Joel Crawford, Yale, B. Barrow, Barrow's Store, and J. W. Baird, Corsley; Dr. J. H. Hargrave, Garysville, secretary, and Dr. R. I. McNair, Emporia, treasurer. Emporia was selected as the next place of meeting in March, 1906.

Richmond Academy of Medicine and Surgery.—The election of officers for this society resulted as follows: Dr. Ramon D. Garcin, president; Drs. J. Fulmer Bright, Ernest C. Fisher and M. P. Rucker, vice-presidents; Dr. Mark W. Peyer, secretary, and Dr. A. L. Sheppard, treasurer. The installation of officers will take place in January, when the annual banquet will be held and steps will be taken looking to the purchase of a home for the academy.

GENERAL.

Harvey Society Lecture.—The fifth lecture in the Harvey Society course will be given by Prof. W. H. Park at the New York Academy of Medicine on January 20, at 8:30 p. m. The subject will be, "A Critical Study of Serum Therapy."

New Hospital in Manila.—St. Paul's Hospital in Manila, since its renovation, is one of the best equipped in the far East. The hospital can now accommodate 150 patients. There are native wards and wards for Europeans. There are also three wards for Americans. There is a well-equipped operating room fitted with all modern appliances. Dr. John R. McDill is surgeon in chief; Dr. W. E. Musgrave, physician in chief, and Dr. Paul G. Woolley, pathologist.

The Medal of Honor Given Dr. Church.—The President, January 10, in the presence of the secretary of war, the chief of staff, and the surgeon general of the Army, presented a medal of honor to Capt. James Robb Church, assistant surgeon, U. S. Army, for gallantry in action at the battle of Las Guasimas, Cuba, on June 24, 1898. The award of this medal was announced in THE JOURNAL, Dec. 30, 1905, and a brief sketch of Dr. Church given. The delay in giving this medal is understood to be due to a failure on the part of his superior officers in recommending Dr. Church for this honor, to conform exactly to certain technical requirements of the regulations governing its award. Gen. Leonard Wood, who commanded the Rough Rider regiment in that fight, was, however, unwilling to let technicalities stand between conspicuous merit and its reward, and succeeded in interesting the authorities at the War Department in the matter, with the result above stated. Dr. Church has, however, lost nothing by the delay, as he becomes thereby the first beneficiary of the executive order issued last September requiring that the presentation of medals of honor thereafter shall be with formal and impressive ceremonial, if practicable, by the President in person. Dr. Church is at present stationed at Fort Robinson, Neb.

Health Report of the Philippines for August.—In the official report for August, 1905, the reappearance of cholera in and around Manila is discussed at some length. From time to time during the year, it is stated, cases which clinically resembled Asiatic cholera came to the attention of the Board of Health, but the diagnosis could not be verified bacteriologically. For the two weeks preceding August 23 the number of suspicious cases was increased. One occurred at San Pedro Macati, one in a bakery in Paco, one in the San Miguel district, one case was that of a soldier in Cuartel de España, and it is now known that a number occurred in Rizal province. It was not until August 23, however, that a case developed in Bilibid prison, which was later found by laboratory examination to be cholera. On the following day six cases of suspected cholera were registered at Fort McKinley. An extra session of the board of health was held, after which Dr. Freer, Dr. Strong and Dr. Heiser, on the invitation of the medical officer in charge, proceeded to the fort to make an investigation of the nature of the disease which had made its appearance in so unexpected a manner. After examining the cases, it was impossible to state positively that they were cholera, although the consensus of opinion was that they were very suspicious. No material could be obtained for a microscopic examination. Several days later, however, the diagnosis was bacteriologically confirmed. On August 25 an American woman residing at the Grand Hotel, Walled City, was attacked, and also a man, who had arrived in the city the night before from Bataan province and had taken lodging at the house of his brother, Calzada de San Sebastian. It was learned later that this man was not absent from the city, on his Bataan trip, more than forty-eight hours. Both patients were removed to the cholera hospital at San Lázaro. A telegram received on August 26, from Jalajala, through the army medical department, contained the following information: "Cases of a disease resembling cholera have developed in Jalajala, the first case being registered August 21; from that date to August 25, 16 cases and 12 deaths have been registered, the illness lasting from twelve to twenty-four hours." On that same date the provincial president of the board of health of Rizal reported, by wire from Pasig, one suspicious case, followed by death, in that town. On the following day the death, from cholera, of a nun in the monastery of Santa Clara, Manila, was reported to the health office. At that convent the most rigid regulations are observed, and communication with the outside world is reduced to a minimum. As this was rather an unusual case, a full and accurate statement of the facts concerning it was secured, and, among other things, it was ascertained that it was the nun who was in charge of the infirmary who had taken the disease. The infirmary is located far inside the building, where there would be very little probability of its coming in contact with anything from the outside. The day of her death the nun felt indisposed and took a laxative from the dispensary of the convent, apparently recovering. After the noon meal she ate some lanzones, supposed to have been taken from a tree in the orchard of the convent, and a few hours later, early in the afternoon, she was taken ill with the disease, dying between 8 and 9 of that evening, with all the symptoms of cholera. No other case occurred in the convent. In the meanwhile other cases were being registered from nearly all the districts of the city, although the number of cases was not very great, as may be seen by the report. From August 23 to 31 only 51 cases and 46 deaths were recorded. In this review of the outbreak it is stated that no effort has been made to draw any definite conclusions, the only aim having been to state certain facts which may be use-

ful later in making further researches into the origin of the disease. The report gives in detail the means adopted to prevent the spread of the disease. During August there were 903 deaths, of which the greatest number were caused by pulmonary tuberculosis, dysentery and cholera. Six hundred and fifteen births were registered during the month (a birth rate of 32.93 per thousand); of these 322 were males and 293 females.

CANADA.

Smallpox in Ontario.—There are over 20 cases of smallpox in the village of Dundalk, Ontario.

Prevalent Diseases.—An epidemic of typhoid is reported from Phoenix, B. C.——Eighty-four cases of smallpox are reported in the county of Dufferin, Ontario, but no deaths.

Ontario Medical Council.—The present building of the Ontario Medical Council has been sold for $100,000, and a new one will be erected at once for the council purposes alone.

Death Rate of Vancouver.—The death rate of the city of Vancouver, B. C., for November, .571, the total number of deaths being 24 in an estimated population of 42,000.

Typhoid in British Columbia.—The provincial health department of British Columbia is taking active steps to suppress the typhoid fever epidemic in certain interior districts of that province.

Vital Statistics of Toronto.—There were 533 more births in Toronto in 1905 than in 1904. The marriages increased 277 and the deaths 33. The total number of births were 6,816; marriages, 3,060; deaths, 3,915.

Tuberculosis Camp.—The Montreal League for the Prevention of Tuberculosis has asked the city council for a grant of land and for financial aid for the purpose of installing near that city a temporary camp for consumptives.

Paying Patients in Insane Hospitals.—The Ontario government has adopted a vigorous policy with regard to the revenue from paying patients in the provincial hospitals for the insane. For years there have been many delinquents, but as the result of the inauguration of this policy the revenue from this source increased in the last four months by nearly $30,000.

Personal.—Dr. Mary McKenzie, Pictou, N. S., who was graduated from the Halifax Medical College last spring, has gone to India under appointment from the Woman's Union Missionary Society of America. Her hospital work will be in Cawnpore. ——Dr. R. C. Hiscock, Kingston, Ont., has been appointed government health inspector with headquarters at Lagos, West Africa.——Dr. McLennan, a native of Cape Breton, Canada, is court physician to the king of Tonga Island in the Pacific Ocean.——Sir James Grant, M.D., Ottawa, has issued in book form the lectures he delivered on tuberculosis in Scotland during last summer.——Dr. R. H. Richards of Winnipeg has sailed from Vancouver for a three months' trip to Honolulu and Australia.——Dr. Elizear Pelletier, secretary of the provincial board of health of Quebec, has returned to Montreal after attending the recent congress on tuberculosis in Paris.

Hospital News.—The Toronto General Hospital fund now amounts to $1,000,000.——The total number of patients treated in the Winnipeg General Hospital during the week ending December 16 was 395; of these, 253 were men, 82 women and 60 children.——The grand jury of the County of York, Ontario, has advised that a new provincial hospital for the insane is needed for the city of Toronto, and recommends that a site of 300 acres be purchased adjacent to the city.——The dominion government is calling for tenders for the construction of a hospital at Lawlor's Island, N. S.——The ratepayers of Winnipeg have voted favorably on a by-law to grant $150,000 for hospital purposes.——The Medical Faculty of the University of Toronto has contributed $50,000 to the Toronto General Hospital.——The Hamilton (Ontario) board of health is advising new isolation and smallpox hospitals for that city.——A fine new general hospital has just been completed at Vancouver, B. C.——Fire destroyed one of the cottages for female patients at the Mimico Provincial Hospital for the Insane, near Toronto. The loss was $15,000. All the patients were safely removed. ——On November 30 there were 302 patients in the Toronto General Hospital. During December 279 were admitted, and 310 discharged, leaving 271 patients in the hospital on Jan. 1, 1906. ——During the week ending December 30, 349 patients were treated in the Winnipeg General Hospital.

Ontario Vital Statistics.—The total number of deaths occurring in Ontario during November was 2,011, or 108 more than were reported in November, 1904. The death rate for the month is 12.3 per 1,000 of the population, as compared with 12 of last year. Throughout the province smallpox still continues on the increase, although it is of a mild character. During the month there were 182 cases, with no deaths, whereas in November, 1904, there were only 2 cases, with no deaths. There were 104 cases of scarlet fever; 249 cases of diphtheria, with 28 deaths; 203 cases of typhoid fever, with 55 deaths, and 128 cases of tuberculosis, with 128 deaths. November, 1905, had the largest number of cases of smallpox since January, 1903, when there were 196 cases and 10 deaths.

National Sanitarium Association's Annual Meeting.—The eighth annual meeting of the National Sanitarium Association was held in Toronto, December 16. Dr. J. H. Elliott, physician in charge of the Muskoka Cottage Sanitarium, made his annual report and stated that during the course of the last official year there were 233 patients under treatment. These had come from all parts of the Dominion of Canada and some from the United States. He advised that the sanitarium be increased in size to accommodate an additional 100 patients. Speaking of those who had been discharged from seven to eight years ago, Dr. Elliott stated that all those apparently cured who could be traced were perfecty well, and in the arrested cases 70 per cent. remain well. Dr. C. D. Parfitt, physician in charge of the Muskoka Free Hospital for Consumptives, presented the report of that institution, which showed that 153 patients had been admitted during the year, while the number of patients treated during the year had been 218. Thirty-seven of these were charity patients from Toronto. The accommodation at this hospital has recently been increased to 75.

FOREIGN.

Governmental Control of Leprosy in Japan.—It is reported that at the approaching session of the imperial diet legislation will be proposed with a view to governmental control of leprosy in Japan.

Physicians in Parliament.—Twenty-two physicians are among the candidates for the next elections to parliament, according to our British exchanges. In Italy, Grocco of Florence has recently been appointed senator. There are now 8 medical men in the Italian legislature, 5 senators, Grocco, De Renzi, Cardarelli, Maragliano and De Giovanni, and 3 deputies, Baccelli, Rummo and Queirolo. Rummo is editor of the *Riforma Medica* and Maragliano of the *Clinica Medica*. All are professors in some medical faculty.

Anthrax in China.—Acting Assistant Surgeon Ransom, at Shanghai, reports that a case of "internal anthrax" occurred at Hankau, Nov. 25, 1905, in an office employé of one of the hide companies. This is the only case of the kind which has recently occurred within the knowledge of the officials at that place. The matter is interesting in that a large percentage of the hides shipped to the United States from China come from the vicinity of Hankau; none, however, are allowed to pass Shanghai unless accompanied by a consular certificate of arsenical curing.

Plague in Japan.—Dr. Moore of the Public Health and Marine-Hospital Service reports that the plague situation in Kobe and Osaka shows no evidence of marked amelioration and that the present outbreak bids fair to prove one of the most formidable manifestations of this infection that has yet visited Japan, excluding Formosa. The American consul at Kobe, he states, has formally declared Kobe and Osaka to be infected ports. There is reason to believe that several of the larger steamship companies plying between Kobe and the United States will decline for the present to sell steerage tickets from that port to the United States under existing circumstances.

Silver Jubilee of Tidsskrift f. d. Norske Laegeforening.—This journal is the official organ of the Norwegian Medical Association. It is published at Christiania and has just completed its twenty-fifth year. To signalize the occasion it gives the portraits of each of its editors and general secretaries during its career, with breezy articles from the pens of each on the *Tidsskrift* in their day, or historical sketches of those who have died. The present editor and the general secretary are Drs. P. Aaser and R. Hansson. The number also contains an article on "Difficulty in Removing the Tube after Intubation," with radiograms of cases, and, as usual, a number of articles on local medical questions, insurance against sickness, sanatoriums, antiquackery movement, etc.

Congress Katzenjammer.—Under this suggestive heading Altschul describes in the *Prag. med. Wochft.* for December 7, his impressions "the day after" the Tuberculosis Congress at Paris. He remarks that it was the most poorly organized

congress that he had ever attended, and he suggests a number of reforms which he thinks are necessary if international congresses are to be of any value to science. Instead of wasting money on entertainments and banquets, etc., the appropriations for this purpose should be devoted to making up the deficit from the smaller membership when only truly interested scientific men are attracted to the congress. As it is now, every effort is made to increase the attendance to cover the expenses. Altschul suggests further that a publisher could surely be found to publish the transactions and supply a copy free to each member if given permission to place the remaining volumes on the market. The main purpose of an international congress is the interchange of opinions, and this can not occur when sections are multiplied and too many subjects and communications allowed. Too much time is wasted in international congresses on discussions of purely local questions. It is refreshing to turn from this arraignment to Sonnenburg's enthusiastic commendation of the recent International Surgical Congress (*Berliner klin. Wochft.* No. 44 *a.*). Every detail of this congress might serve as a model to all others, he exclaims. It was described in these columns on page 1180 of the last volume. Instead of being merely an opportunity for young fellows to disport themselves in public, it was devoted to a fruitful interchange of opinions between mature, experienced minds, on a limited number of vital themes.

International Antiquackery Campaign.—The first officially organized society for the repression of quack practices was the "Vereeniging tegen de Kwaksalverij," which was founded in Holland twenty-five years ago. The occasion for its founding is said to have been the extensive advertising throughout the country of Ayer's sarsaparilla, pain expeller, etc. The society recently celebrated its twenty-fifth anniversary. Treub of Amsterdam delivered an address on "Quack Practices," and J. M. van Elk of Zutphen, Holland, one on the "International Antiquackery Campaign." The latter referred to Henry Graack's recent compilation of the laws and regulations affecting the practice of medicine and quack practices in Germany and elsewhere. He expressed the hope that this important work may be the source of fruitful study for legislators and others in Europe and throughout the world. He remarked that although the laws of Holland still leave much to be desired, they have certain model features. Unfortunately, they are not enforced, and any one can assume the title of "Dr." at will. He referred to the connivance of the lay press in the advertising of quacks and nostrums, and declared that the various governments are not yet convinced in regard to the tremendous evils of quack practices and nostrums. It should be the task of the various antiquackery organizations to enlighten legislators in this respect. When the governments are once convinced, then an international antiquackery conference should be organized. The board of health of Carlsruhe and its brave mayor have been working for years along this line. They publish the analysis of various secret remedies advertised, showing the way in which the public is being swindled out of its money. (Their work has been previously described in THE JOURNAL.) Sweden has also a well-organized antiquackery society under the leadership of Dr. T. Thunberg and Prof. C. T. Mörner. Efforts are being made also in other countries, but unfortunately, so far the organizations stand alone, and lack the benefits and strength of international support. International organization and co-operation are imperatively needed. Associations should be formed with local branches everywhere, all co-operating in collecting data and holding conferences occasionally for discussion of ways and means. The first thing to be done, he continued, is to make the press responsible for quack advertisements. If the papers were held responsible for injury resulting from such advertisements, these would soon disappear from their columns; but this, van Elk believes, must be done internationally. It would do little good if the newspapers of Holland, for instance, were to refuse to take these advertisements, as the quacks would simply transfer their advertisements elsewhere. Another important point, he added, is to have severe penalties imposed on persons distributing fake medical pamphlets and circulars. The police should be empowered to suppress their distribution, but this will not prove effective unless the measure is international. The practice of medicine should be restricted to qualified persons, and the present freedom allowed to any one to practice "nature healing," etc., should be withdrawn. It should also be strictly forbidden to manufacture, to sell or to hold in stock any remedy for which the true and exact formula is not printed on the wrapper in popular language. Then only will the public know what it is buying. The giving of a false or incomplete formula should entail a severe penalty. Here, too, action should be international, so that, for instance, the German court should impose a penalty in Germany on the manufacturer of a remedy made in Germany to be sold in another country, and *vice versa*. The German Antiquackery Society sent Rumpe of Krefeld and C. Reissig, the editor of its official organ, *Hygienische Blätter*, as representatives to the jubilee meeting, and van Elk greeted them as announcing the dawn of an international era in the campaign against the many-headed hydra of charlatanism. Before the meeting adjourned the nucleus for an international antiquackery committee was organized. The members appointed are Lind, van Gelder, Treub and van Elk, of Holland; Rumpe of Krefeld, and C. Reissig, Hamburg 5, of Germany. The *Hygienische Blätter* is published by E. Grosser, Berlin, Wilhelmstrasse 121. Subscription 1.5 marks a year, or about 50 cents, including postage. Most of the above report of the Holland meeting is translated from its December issue.

Prizes Offered by the Paris Academie de Medecine.—The French are particularly fond of the endowed prize, and the Paris Académie de Médecine has fifty at its disposal, which are open to the competition of the world. Most of them are annual, but others are biennial and even quinquennial. The prizes are awarded early in December of each year, the lists being closed by February of the current year. Competing works must be in French or in Latin. All the prizes this year were given to physicians residing in France or its colonies, with the exception of the Godard prize of $200, given to Dr. Faxton E. Gardner of New York City for a work entitled "Plastic Operations and Anastomoses in Treatment of Renal Retention," and $120 to Dr. S. R. Hermanides of Zeist, Netherlands, for a work on the parasyphilitic affections. Franceschini of Vicenza, Italy, and Pawinski of Warsaw also received honorable mention. Cristiani of Geneva received part of a prize for his work on thyroid grafting, and also Remlinger, director of the Pasteur Institute at Constantinople, for his works on rabies. THE JOURNAL for Jan. 14, 1905, page 138, commented on the fact that so few physicians from America compete for these prizes. Full details of competition were given in THE JOURNAL for Jan. 24, 1903.

The prizes for which competing articles must be sent in with the writer's name in a sealed envelope are the Académie prize of $200 (in 1906), for the best work on the pathogenesis of pulmonary edema; (1907), on the physiology and pathology of the suprarenal capsules, and (1908), on the etiologic and clinical relations between infectious diseases and neoplasms; the Alvarenga de Piauhy annual prize of $160 for the best work on any branch of medicine; the Capuron annual prize of $200, (1906), on the gases in certain designated mineral waters, (1907), on relations between menstruation and ovulation, and (1908) on the detachment of the placenta during the last two months of pregnancy and during childbirth; the Civrieux annual prize of $160 (1906), for the best work on acute encephalitis (1907), on spinal syphilis, and (1908), on homicide in mental pathology; the Daudet annual prize of $200 (1906), for the best work on *x*-ray treatment of cancer (1907), on evolution and prognosis of epitheliomatous tumors of the ovary, and (1908), on melanic sarcomata; the Fairet biennial prize of $140 (1907), for the best work on the mental condition in dipsomania; the quadrennial Herpin prize of $240, (1906), for best work on the abortive treatment, either at début or during incubation, of affections caused by trypanosomas; the Lefèvre triennial prize of $360 (1908), for best work on melancholia; the Louis triennial prize of $600, (1907), for best work on radiotherapy of neoplasms; the Mège triennial prize of $180, (1907), on etiology and pathogenesis of phlebites; the Orfila biennial prize of $400 (1906), for best work on purification of water used in cities and of the residual water from factories; the Portal annual prize of $120 (1906), for best work on thyroid neoplasias, pathologic anatomy and pathogenesis (1907), on leukemias, and (1908) on the blood and blood-forming organs in pernicious anemia, and, finally, the Pourat annual prize of $140 (1906), on the soluble ferments which enter into play in diseases; (1907) on experimental study of sensory, motor and vascular innervation of the larynx, and (1908), on the modifications of pressure which occur in the cavities of the heart during the ventricular pause and the causes which determine these modifications.

Articles competing for all the above must be sent in anonymously. In addition to these there is a long list of prizes to be awarded for either manuscript or printed works.

They include the Amussat prize, $200 (1908), for surgical therapeutics; the Apostoli annual prize, $120, on electrotherapy; the Baillarger biennial prize, $400 (1906 and 1908), for study of treatment of mental affections and organization of insane asylums; the Barbier annual prize of $400 for a complete cure of some disease hitherto deemed incurable. This prize can be apportioned to encourage workers in this line; the Boggio triennial prize of $860 (1907), to encourage and reward studies to find a cure for tuberculosis; the Boullard biennial prize of $240 (1906 and 1908), for the best work or the best results in arresting, attenuating or curing mental affections; the Bourceret annual prize of $240, for best work on circulation of blood; the Buisson triennial prize of $2,100 (1907), for best discoveries having for result the cure of some affection hitherto deemed incurable; the Campbell-Duplerris biennial prize of $460 (1906 and 1908), for best work on anesthesia or on affections of the urinary passages; the Chevillon annual prize of $300 for best work on treatment of cancerous affections; the Clarens annual prize of $80, on hygiene; the Desportes annual prize of $260, practical medical therapeutics and on practical natural history and therapeutics; the Godard annual prize, $200, for best work on internal pathology (1906), external path

ology (1907), internal pathology (1908). The P. Guzman prize is an income of about $266 at 3 per cent., which will be given for the discovery of a truly effectual treatment of some common form of organic heart disease; the T. Herpin prize of $600, annual, for the best work on epilepsy and nervous diseases; the Hugo prize of $200 is given every five years, in 1906 for best work on some point in the history of the medical sciences; the Itard triennial prize of $480, for best book on practical medicine or applied therapeutics; the Jacquemier triennial prize $340 (1907), for work on some obstetrical subject which shall have realized an important progress; the Laborie annual prize of $1,000 for the author who has notably advanced the science of surgery; the Larrey annual prize of $100 for best work of medical statistics; the J. Lefort prize of $60 (1908), for best study of mineral waters; the H. Lorquet annual prize of $60 for best work on mental affections; the Mevnot annual prize of $520 for best work on affections of eyes (1907), and of ears (1906-1908); the A. Morin five-year prize of $400 (1908), for the best work by physician under 30 on cure of diphtheria; the Nativelle annual prize of $60 for extraction of active principle, not yet isolated, of some drug; the Reboleau prize, triennial, $340, hernia (1908); the P. Ricord biennial prize, $120 (1907), for best work that has appeared during the two years on venereal diseases; the Saintour biennial prize of $880, for best work on any branch of medicine; the Stanski prize of $280, biennial (1906 and 1908), for demonstration of existence or non-existence of miasmatic contagion by infection or by distance contagion, studied in epidemics in general or in some special epidemic; the Tremblay prize of $1,440, given every fifth year (1908), for best article on affections of the urinary passages, catarrh of the bladder or some affection of the prostate, and the Vernois annual prize of $140 for best work on hygiene.

In addition to these prizes there is the great Audiffred endowment, representing an income of 24,000 francs, or $4,800, to be given to the person who, before April, 1921, discovers a sovereign preventive or curative remedy for tuberculosis. The *Bulletin de l'Académie de Médecine*, No. 41, 1905, gives the full particulars of all these prizes. Copies can be obtained from the publishers, Masson et Cie, 120 boulevard Saint-Germain, Paris. It is a pity that more Americans do not compete for these prizes. No article can be entered into the competition for more than one prize in the same year. The trouble of having their article translated into French has undoubtedly deterred many Americans from competing, but this could easily be arranged at comparatively small expense. Address all communications for the Académie to the secrétaire perpetuel, Académie de Médecine, 16 rue Bonaparte, Paris. In this connection we might call attention again to the official information bureau at Paris, the "Bureau des Renseignements Scientifiques" à la Sorbonne. It is in charge of Dr. Blondel.

LONDON LETTER.

The London School of Clinical Medicine.

In recent years something has been done to remove from London the reproach of being alone among the capitals of the world in making absolutely no provision for postgraduate teaching. It is now proposed to use the Dreadnought or Seamen's Hospital at Greenwich as a postgraduate school, to be termed the London School of Clinical Medicine. The scheme has received considerable support from some of the most influential members of the profession in the metropolis. The following staff has been constituted: Physicians, Sir Dyce Duckworth, Dr. Frederick Taylor, Dr. Rose Bradford, Dr. R. T. Hewlett and Dr. Guthrie Rankin; surgeons, Sir William Bennett, Mr. Mayo Robson, Mr. A. Carless, Mr. William Turner and Mr. McGavin; ophthalmic surgeon, Mr. V. Cargill; dermatologist, Mr. Malcolm Morris; laryngologist, rhinologist and otologist, Dr. St. Clair Thomson; electrotherapeutist, Mr. Mackenzie Davidson; stomatologist and dentist, Mr. Kenneth Goadby. These men will each receive a certain number of beds and take an active part in teaching. In this way the large and varied clinical material of the hospital will be made available for instruction. A special feature of the school will be exceptional opportunities for acquiring skill in operative surgery afforded by the relatively large number of unclaimed bodies which can be utilized for the purpose. Negotiations are in progress with various special hospitals, with a view of making the teaching of the London School of Clinical Medicine complete in every detail.

The Decline of the Birth Rate.

At the Royal Statistical Society two important papers were read on the decline of the birth rate. The first was by Drs. A. Newsholme and T. H. C. Stevenson. In the course of the paper the term "corrected birth rate" was introduced and was defined as a rate-making allowance for the fact that some populations include a much larger proportion than others of wives at a certain age, and taking into account both the ages and numbers of wives. This corrected rate gives different figures to the "crude birth rate." For instance, the crude birth rate of Ireland in 1903 was 23.1, which is only a little higher than that of France in 1902 (21.7); but correction practically unaffected the French birth rate, whereas the Irish was increased to no less than 36.1, showing that the Irish fertility was nearly twice that of the French. This remarkable result is due to the fact that although both countries had approximately the same proportion of women, aged from 15 to 45, in their populations, 52.5 per cent. of these in France are married, as against 32.5 per cent. in Ireland. The greatest decline of fertility among the countries studied during 1881 to 1903 was shown by the following: England and Wales, 17 per cent. decline; New Zealand, 18 per cent.; Belgium and Saxony, each 24 per cent.; Victoria, 25 per cent.; and New South Wales, 33 per cent. Ireland alone showed an increase of fertility, 3 per cent. The authors arrived at the conclusion that the decline is associated with a general raising of the standard of comfort, and is an expression of the determination of the people to secure this greater comfort. This gospel of comfort is becoming the practical ethical standard of a rapidly increasing number of civilized communities. They have no hope that any nation—in the absence of strong and overwhelming moral influences to the contrary—would be permanently left behind in this race to decimate the "race," and they anticipate as a result a deterioration of the moral, if not also of the physical nature of mankind. The second paper was read by Mr. G. U. Yule. He stated that a comparison of the fertilities of married women in different districts of London in 1871 and 1901 showed that, while in the upper class districts the fertility had dropped by about 20 per cent., in the lowest class districts it was practically unchanged. It must, however, have fallen among the working classes in general, for the fall in the upper class districts is little more than for the country at large. A careful examination of fluctuations in the birth rate shows that it appears to respond, like the marriage rate, to the cycle of trade and industry.

The Use of Boric Acid as a Food Preservative.

The difficulty experienced in the courts in deciding as to the legality of the use of boric acid as a preservative in milk (reported in a previous letter) is also arising in regard to other articles of diet. The use of food preservatives is becoming more and more widespread. A firm of provision merchants was summoned for selling sausages containing 41 grains of boric acid to the pound. In the course of three hours' hearing a large number of experts were called on each side—those for the prosecution arguing that boric acid is a "foreign ingredient," prejudicial to the purchaser; and those for the defense contending that this is not so, as the acid is used as a preservative and is harmless. A. Stokes, an analyst, who was called by the prosecution, admitted that perhaps a tenth of all the samples he analyzed contained boric acid. Tinned fish and paste contain it and it is used for washing the fish on the fishmongers' stalls. Three-fourths of the butter imported into this country contain boric acid, though not to the extent of 41 grains a pound. No steps have been taken to prevent this. Mr. J. Douglas, another analyst, stated for the defense that boric acid is a usual ingredient of preservatives. "Boram" is made for sausages from boric acid. Without a preservative, sausages made with meat and bread only would not keep two days, even though the meat was the best and fresh. Dr. F. W. Tunnicliffe, a member of the departmental committee of the Royal Commission of Agriculture, said that there are many preservatives, the strongest of which is formalin, 1 part in 20,000 of which is effective. If formalin were used for meat in proportions similar to boric acid, the meat could not be digested. Mr. Cluer, the magistrate, remarked, that butchers washed meat with formalin and then it would keep two months. Dr. Tunnicliffe remarked that one sometimes got a sole which was tough and had been treated with formalin. This was known as a "formalin sole." "A reasonable man," said the magistrate, "ought not to eat more than 2 sausages. That would include 12 grains of boric acid. The evidence for the prosecution was that 41 grains would be injurious, but possibly if a man ate a pound of sausages he would suffer more from them than from the boric acid. Dr. F. J. Smith, physician to the London Hospital, said that he had prescribed 10 grains of boric acid thrice daily for an adult without harm. Drs. J. P. Bate and H. R. Kenwood, both health officers, and the latter lecturer on public health at University College, expressed the strongest opinions that boric acid is injurious to health. Dr. Kenwood pointed out that, although the amount of boric acid in the sausages might not be shown to be injurious, if a man were taking also boric acid in his milk, meat, fish and preserves, the possibility of poisoning is obvious. He could not understand why boric acid is forbidden in milk and not forbidden in butter.

Pharmacology

PHENALGIN—A TYPICAL EXAMPLE.

Last June[1] we devoted considerable space to the extravagant therapeutic claims made for "Phenalgin" by its vendors. At this time we propose to refer to the misinformation—to use a conservative term—that the Etna Chemical Company has promulgated regarding the composition of their preparation.

Last June the Council on Pharmacy and Chemistry officially published to the medical profession of the United States the information that repeated examinations showed that "Phenalgin" is a simple mixture of acetanilid and sodium bicarb. or ammonium carb. So far as we know, no direct denial of the truth of this has been made. There has appeared what we presume is meant as an answer; it is couched in this sentence:

> "PHENALGIN IS JUST WHAT WE HAVE ALWAYS SAID IT TO BE."

From this expression—which has been repeated in bold, black letters in practically all the advertisements since last June—we presume that we are to understand that in the past they have stated what it is.

It would have been just as easy and more satisfactory if the Phenalgin people, instead of saying: "Phenalgin is just what we have always said it to be," had said what it is, since the average physician has neither the time nor the inclination to look up their literature.

For the benefit of those who desire to know what the vendors of Phenalgin "have said it to be," we have gone over their advertising literature of the past, with the following results, which are in the form of quotations from their advertisements:

> "AN AMERICAN COAL-TAR PRODUCT—PHENALGIN—THE ONLY SYNTHETIC STIMULANT, NON-TOXIC, ANTIPYRETIC, ANALGESIC AND HYPNOTIC."

> "PHENALGIN IS THE **ONLY** AMMONIATED SYNTHETIC COAL-TAR PRODUCT MADE FROM CHEMICALLY PURE MATERIALS." [What have the Ammonol people to say to this?]

> "A SYNTHETIC COAL-TAR PRODUCT OF THE AMIDO-BENZINE SERIES, CONTAINING NASCENT AMMONIA."

> "THESE TWO CHEMICALS ['stimulant ammonia of coal-tar origin' and 'chemically pure phenylacetamide'] COMBINE UNDER CERTAIN CONDITIONS SO AS TO OBTAIN A PRODUCE WHICH HE [Dr. Cyrus Edson] NAMED PHENALGIN OR AMMONIATED PHENYLACETAMIDE."

> "PHENALGIN IS A COMPOUND OF PECULIAR CHARACTER WHICH CAN NOT BE EXTEMPORANEOUSLY MADE INTO TABLETS FROM THE POWDERED DRUG, WITHOUT SERIOUSLY CHANGING AND IMPAIRING ITS MEDICINAL QUALITIES."

We believe these quotations are sufficient to show what the Etna Chemical Company has "always said it to be." In going over the literature for several years past we find the above stated in the same, or similar, words in nearly all of it. From the above four statements may be deduced: 1. They have stated that Phenalgin is a synthetic[2] preparation; 2, they have conveyed the impression that Phenalgin is a chemical compound; 3, they have announced repeatedly that it is the "only" preparation of the kind, and 4, they have claimed that Phenalgin is non-toxic.

We believe that these four statements represent in plain English what the above quotations mean. They are all absolutely false. Phenalgin is not a synthetic; it is not a chemical compound; it is not the only ammoniated phenylacetamide, or the only acetanilid mixture containing carbonate of ammonia—and it most positively is toxic.

1. See THE JOURNAL A. M. A., June 24, 1905, p. 1997.

2. Dunglison's Dictionary: Synthetic—"In chemistry the formation of a more complex body by the union of simpler bodies." Dorland's Dictionary: "Synthesis—The artificial building up of a chemic compound by the union of its elements." "Union" is not mixing.

In one place it is stated that Dr. Cyrus Edson

> "EMPLOYED HIS GREAT FACILITIES FOR CHEMICAL RESEARCH AND OPPORTUNITIES FOR CHEMICAL EXPERIMENT FOR THE PURPOSE OF PRODUCING A FORMULA FOR A COMBINATION OF STIMULANT AMMONIA OF COAL-TAR ORIGIN (sic) AND CHEMICALLY PURE PHENYLACETAMIDE, ALSO A COAL-TAR PRODUCT . . . WHICH HE NAMED PHENALGIN, OR AMMONIATED PHENYLACETAMIDE."

In another place we read that Phenalgin is made

> "UNDER THE IMMEDIATE SUPERVISION OF THE ORIGINAL INVENTOR OF AMMONIATED COAL-TAR PRODUCTS."

By comparing this last quotation—which is from a current—1905—advertisement—with the preceding one it will be noticed that we are asked to believe that Phenalgin is made "under the immediate supervision of" Dr. Cyrus Edson—and yet Dr. Cyrus Edson died Dec. 2, 1903. This is equal to Lydia Pinkham's prescribing for the suffering women of America when the dear old soul has been dead for over twenty years.

We have before us a full-page advertisement taken from a recent number of a weekly medical journal, which possibly is meant as an answer to the announcement of the Council on Pharmacy and Chemistry that Phenalgin is a simple acetanilid mixture. The advertisement is divided into two parts; the first part is as follows:

> "FACTS ABOUT ACETANILIDUM.
>
> (ANCIENT HISTORY.)
>
> "IT HAS LONG BEEN RECOGNIZED THAT ACETANILIDUM AND MOST OTHER COAL-TAR PRODUCTS ARE APT TO EXERT A DEPRESSING INFLUENCE UPON THE HEART, BUT THERE HAS NEVER BEEN ANY DOUBT ABOUT ITS GREAT VALUE AS A PAIN RELIEVER AND TEMPERATURE REDUCER. ITS THERAPEUTIC VALUE HAS, HOWEVER, BEEN PRACTICALLY NULLIFIED BY THE DANGER OF CYANOSIS AND OTHER EVILS CAUSED BY ITS WELL-KNOWN DEPRESSANT ACTION AND THE DIFFICULTY OF OBTAINING IT IN A PURE STATE. IT BEING KNOWN THAT CERTAIN DELETERIOUS SUBSTANCES ARE OFTEN TO BE FOUND IN COMMERCIAL ACETANILIDUM AND THAT MUCH OF THE INJURIOUS EFFECT ATTRIBUTED TO THIS DRUG IS ENTIRELY TRACEABLE TO THESE IMPURITIES."[3]

The above are also falsehoods. The therapeutic value of acetanilid is not practically nullified . . . by the difficulty of obtaining it in a pure state." Neither is it true that "much of the injurious effect attributed to this drug is entirely traceable to these impurities." While deleterious substances may be found in *commercial* acetanilid, they are not found in the substance offered as medicinally pure acetanilid by reputable firms. Pure medicinal acetanilid is a cheap article, costing less than 30 cents a pound, for it is a substance that is easily and cheaply purified. It is a fact that the injurious effects are in the acetanilid itself and not in the impurities it may occasionally contain.

The second half of the advertisement in part is as follows:

> "FACTS ABOUT PHENALGIN.
>
> (MODERN SCIENCE.)
>
> "MORE THAN A DECADE AGO THE LATE DR. CYRUS EDSON, THEN HEALTH COMMISSIONER FOR NEW YORK CITY AND NEW YORK STATE, RECOGNIZING THE VALUE OF CHEMICALLY PURE ACETANILIDUM AS A THERAPEUTIC AGENT, IF IT COULD BE DEPRIVED OF ITS DEPRESSANT QUALITY, EMPLOYED HIS GREAT FACILITIES FOR CHEMICAL RESEARCH AND OPPORTUNITIES FOR CHEMICAL EXPERIMENT, FOR THE PURPOSE OF PRODUCING A FORMULA FOR A COMBINATION OF STIMULANT AMMONIA OF COAL-TAR ORIGIN AND CHEMICALLY PURE PHENYLACETAMIDE, ALSO A COAL-TAR PRODUCT. THESE TWO CHEMICALS COMBINE UNDER CERTAIN CONDITIONS SO AS TO OBTAIN A PRODUCE WHICH HE NAMED PHENALGIN OR AMMONIATED PHENYLACETAMIDE."

3. This sentence is not complete, but, of course, this is immaterial. Little things like an incomplete sentence do not count.

There is more of the same character. In the first place, we call attention to the fact that "Phenylacetamide" is substituted for "Acetanilidum" when it is to go into Phenalgin. To mystify is one of the "tricks of the trade." Few physicians keep up with chemical terms and, therefore, are not supposed to know that Phenylacetamide is one of the chemical names for Acetanilid.

The reference here to Dr. Cyrus Edson brings up another fact, and that is that the Etna Chemical Company tries to convey the idea that Dr. Edson was the originator of Phenalgin. We have always understood that Dr. Cyrus Edson had something to do with pushing Ammonol and, if we remember rightly, got into some trouble thereby. We do not know the exact facts, but the following letter shows that he had a leaning toward another "ammoniated phenylacetamid." The letter is dated "New York, Oct. 6, 1894," and is addressed to the "Ammonol Chemical Company."

> "During the past six or eight months I have used Ammonol extensively in my private practice. I have found it excellent in the treatment of neuralgias and for rheumatism. I have also verified your statement in two cases that were suffering from alcoholism. My experience justifies me in saying that it is the safest and best of the analgesic coal-tar derivatives.
>
> "Very truly yours,
>
> "CYRUS EDSON, M.D."

It may be of interest to know that the principal member of the firm of the Etna Chemical Company was at one time a member of the Ammonol Company, and it is usually understood, we believe, that Phenalgin is practically the same as Ammonol—in fact, the analyses published regarding the two preparations show this to be a fact.

We must make one more quotation:

> "IT MAKES LITTLE DIFFERENCE TO A PHYSICIAN WHETHER PHENALGIN IS A MIXTURE OR A COMPOUND OR A SYNTHETIC, WITH A NAME THAT WOULD DESTROY THE ORTHOGRAPHIC BALANCE OF THE UNIVERSE, PROVIDED IT IS JUST WHAT HE HAS ALWAYS FOUND IT TO BE."

Very complimentary to the intelligence and common sense of physicians, it it not?

Suppose some fellow should get up a scheme to exploit a mixture of quinin and some cheap, harmless drug, say, starch—equal parts of each. Suppose he gives it a fanciful name, puts it on the market at a high price, say $1.25 an ounce, and announces it as a new synthetic with wonderful therapeutic properties. Suppose that the schemer then adopts the nostrum vendor's methods of fooling physicians into using his product by getting some to give testimonials, others to furnish writeups, and then subsidizes medical journals through liberal advertising, to print both the testimonials and the writeups. The preparation would, of course, prove to be a good thing if it were used in liberal quantities where quinin would ordinarily be used, and some patients using it would get well even if quinin were not indicated. Then with the psychologic effect of the testimonials, the writeups, and good, strong claims rightly pushed, unthinking physicians would do the rest. And then, after a while, when the schemer had gotten to the point where, each year, he was making a fortune out of his preparation, suppose some "self-appointed chemists" should examine into the preparation and discover that it was nothing but quinin and starch and so announce to the doctors of the country; what would the doctors say? That it makes little difference "provided it is just what he has always found it to be"?

This analogy is not far-fetched, for it is practically what has been done with Phenalgin. One difference is that since quinin costs as much per ounce as acetanilid does per pound, the profits on the acetanilid mixture would be sixteen times greater that that of our imaginary preparation. Another difference is that acetanilid is really a dangerous drug, unless used with care, both in its immediate and in its remote effects; quinin is far less so.

"Little difference" indeed, whether we are being buncoed or not! Evidently!

In conclusion, we charge the Etna Chemical Company with intentionally misleading and deceiving the members of the medical profession, in that the said company has in its literature and in its advertisements conveyed the impression (whether directly stated or not): First, that its preparation, Phenalgin, is a synthetic compound; second, that Phenalgin requires special skill in its preparation; third, that Phenalgin has therapeutic values which it does not possess, and fourth, that Phenalgin is non-toxic.

We also charge that on account of these and other misrepresentations this company has inveigled physicians into prescribing and using a simple mechanical mixture of common well-known cheap drugs—for which an extravagantly high price is charged—under the supposition that this combination of cheap drugs is a chemical compound of special and peculiar merit as a therapeutic agent and, therefore, worthy of their confidence.

Our object in again giving space to this preparation—and practically all we have said applies to the other acetanilid mixtures that are exploited under fictitious names or as chemical compounds (such as ammonol, antikamnia and salacetin or sal-codeia-Bell)—is to impress on physicians, by a typical example, the shamefulness of the deceptions practiced on them by nostrum manufacturers to the great injury of the public and of the medical profession.

A Protest Against Acetanilid.

Dr. A. Jacobi, in an article on the treatment of tuberculosis (*American Medicine*, Dec. 23, 1905), says:

> Use no acetanilid. I have almost despaired of the effect of my frequently repeated warning against acetanilid, the so-called antifebrin. Of all the preparations on the market, this cruel anilin poison is the worst. The western firm which disseminates that curse over the country, and that part of the profession which allows itself to be entangled in the complicity of prescribing it on its own blanks over its own names for their unsuspecting and confiding patients, stand guilty of malfeasance and malpractice. One of the greatest shocks to my feelings as a man and physician has been the discovery that our new Pharmacopeia, which should be the pharmacal gospel of both druggists and doctors, participates in the mistake of recommending it. In that Pharmacopeia, p. 3, you find acetanilid; and p. 368, pulvis acetanilidi compositus—a mixture of acetanilid, caffein, and sodium bicarbonate. You recognize the dangerous stuff. It goes by the name of headache powders or by some exotic alluring name. Your Pharmacopeia recommends doses of 0.48 gm. (7.5 gr.), more than 0.32 gm. (5 gr.) of which are acetanilid—and does not even say how many doses the victim may take without having to pay his obolus to Styx. These headache powders were those a young laboring man had taken when he presented himself in semicollapse and cyanosis a few days ago. They are those which their highest authority permits the pharmacists to sell over the counter. Altogether, I need not say, and you know, that the tendency of the new Pharmacopeia to adopt the compound names, is an indignity offered to the profession and an encouragement to the nostrum trade.

A Druggist's Opinion of Patent Medicines.

A well known and highly respected druggist doing a large business in the south part of Minneapolis, puts the following "sticker" on every package sent out from his store:

> "It is always wise to consult your family physician.
> Avoid patent medicines and fakers.
>
> "40 YEARS' EXPERIENCE."

That is manly and courageous, and as there is no "patent" on the "sticker," we commend it to all druggists seeking the patronage of physicians and the respect of the public and of themselves.—*Northwestern Lancet.*

We Always Did Like This Story.

Diogenes, lantern in hand, entered the village drug store.

"Say, have you anything that will cure a cold?" he asked.

"No, sir; I have not," answered the pill compiler.

"Give me your hand!" exclaimed Diogenes, dropping his lantern. "I have at last found an honest man!"—(Source unknown.)

To Supervise Nostrums in British Columbia.

The *British and Colonial Druggist* states that the provincial government has appointed a commission to investigate the sale of patent medicines containing harmful ingredients, with a view to legislation to protect consumers against the evil consequences of using these remedies. The step is the outcome of the recent death of an infant, which was poisoned by laudanum contained in a patent medicine.

Correspondence

Oregon and Organization.

PORTLAND, OREGON, Dec. 29, 1905.

To the Editor:—In your issue of Dec. 9, 1905, appears an article by J. N. McCormack, M.D., which, among other unwarranted statements about the medical profession in Oregon, contains this: "There was evidence on every hand that the schools of Oregon do not have high standards of requirements." In commenting on this article editorially, you write: "The average of the profession is low and the medical schools are weak."

By a strange coincidence, THE JOURNAL for December 9, containing these slurs, did not reach me in my mail, so I did not see it until a few days ago, when a copy was handed to me by a medical friend; otherwise I would have replied sooner.

As there are but two medical schools in Oregon, and the medical department of the University of Oregon is one of them, it is fair to assume that that school was included in the general libel on Oregon schools.

As dean of that school since its organization, almost twenty years ago, permit me to say that the statements regarding it made by Dr. McCormack are unjust and without proper foundation.

When the school was organized in 1887, it was what nearly all medical schools in the United States were at that time, a two-year course school. Shortly after that it became a three-year-course school, and in 1895 adopted the four-year graded course requirement. It has always kept at least abreast of the requirements laid down from time to time by the Association of American Medical Colleges (of which it has been a member since 1896), and at present requires four courses of lectures of seven and a half months each, with a curriculum in excess of that required by the Association of American Medical Colleges. Its laboratory and clinical facilities are ample, its lecture corps is efficient, its examinations are rigid. Its students who have gone elsewhere have stood high in other colleges. Its alumni furnish successful, prominent and respected practitioners in all parts of this country. The men connected with the school have labored honestly, assiduously and untiringly, in competition with the large and strongly endowed schools and with much self-sacrifice, constantly to elevate its standard, and they have been successful in keeping it on a plane commensurate with the advanced ideas of the times. Not a year has passed that its efficiency has not been increased.

The school does not pretend to approach in equipment the great endowed medical schools where the attendance is so much greater and where specialties are thoroughly taught, but it does maintain an equipment equal to the needs of the numbers in its classes, and its facilities enable us to teach well and thoroughly. It presents an instance of the small unendowed school doing honest, faithful and efficient work, notwithstanding that it is overshadowed and belittled by its great and haughty brother, the endowed school. But the small school has its work to do, and always will have; further, you will find that the small colleges of the country have given as many or more great men to the world as have the great schools. As in all schools, great or small, some poor students gain entrance and even graduate, so exceptionally such cases may have occurred here; but even if so, no fair-minded man would think of making such rarely exceptional cases the standard of worth of the school.

I am surprised that a man occupying the position of chairman of the committee on organization of the American Medical Association should have such a poor conception of justice and equitable rights as to pronounce such judgment as is contained in his screed on Oregon without proper investigation. If his pronunciamentos on other matters are based on such partial observations and investigations as in the case in point, they are absolutely without value.

Dr. McCormack has done us the gross injustice of publishing to the world, on insufficient and *ex parte* testimony given by prejudiced persons, his conclusions that the schools of Oregon do not have high standards of requirements. Editorially you add insult to injury by stating that this school (it being included in the "schools of Oregon") is weak. Evidently Dr. McCormack's mind was poisoned from the lips of those who are jealous of the school and its success, and who vindictively take every opportunity to smirch its good name. Such are to be found in every community which is striving to be or has become a medical center. What was Dr. McCormack's duty before publishing his conclusions regarding this school? Clearly to hear both sides of the question. Had he come to me or to any other member of this faculty for information, it would have been furnished to him gladly. The same remark applies to your own editorial expression. That a great journal should condemn this school as a weakling, on the mere *ipse dixit* of a traveler on organization of the American Medical Association, without notice or opportunity to be heard, is astounding, nay, outrageous.

I met and talked with Dr. McCormack on the evening of his visit and address to the Portland City and County Medical Society, but to me he said never a word about investigating medical schools or reporting on them, nor of wishing information as to what he had heard of them or of their operations.

His strictures on the medical profession of Oregon, and of Portland in particular, founded on half-truths and distorted facts, are unjust and unwarranted, because he has founded a judgment on hasty and superficial investigation of conditions, instead of searching deeply for the whole truth. If he had probed deeper he would have found that those whom he tries to scourge with his rod are the ones who, by effort and loyalty to the medical profession and to the American Medical Association, have been earnest laborers in the work of organization.

S. E. JOSEPHI, M.D.

The above letter was referred to Dr. McCormack, who replies as follows:

BOWLING GREEN, KY., Jan. 7, 1906.

To the Editor:—For nearly five years I have been engaged in a critical study of professional conditions, customs and prospects in nearly every section of the country, and in reporting the results of such observations in a manner intended to be both kind and helpful after my visit to each state. Charged with important duties, I have been forced to say unpalatable things, but, being without either the motive or inclination to do any section or individual injustice, and my work being entirely in the interest of harmony and well-being of the profession of the state or locality visited, Dr. Josephi is the only one who has ever questioned the accuracy of any statement made by me.

I have had numbers of letters from the leading physicians of Oregon expressing regret for the necessity of saying these plain things, but cordially indorsing what I had written, as well as the spirit in which it was done. Without further reference to these, or to the fact that my criticisms were based on personal observation and inquiry in almost every section of the state, I am going to put Dr. Josephi on the stand and prove by him that I might have said much more along the same lines and still be well within the bounds of truth. I said that the schools of Oregon did not have high standards of requirements, and the editorial comment was that they were weak. I quote Dr. Josephi on the same point, so far as his school is concerned: "The school does not pretend to approach in equipment the great endowed schools where the attendance is so much greater and where specialities are thoroughly taught," and, to my surprise, he evinces the unfortunate spirit found so abundantly there, which I had been informed he did not possess, when he says again, "notwithstanding that it is overshadowed and belittled by its great and haughty brother, the endowed school."

I said again, in substance, that personal and factional jealousy dominated the profession of his city. Dr. Josephi makes this appear very mild when he says, in the light of his long experience as a practitioner and teacher there, "Evidently Dr. McCormack's mind was poisoned from the lips of those who are jealous of the school and its success, and who vindictively take every opportunity to besmirch its good name." I submit that neither my article nor the editorial complained of contain anything, in substance or spirit, so conclusive as these quotations.

I am doing this work very reluctantly, and would not do it at all if I could not discuss the results of my investigations with the utmost frankness. The fundamental evils which

form the basis of my criticism were freely admitted to exist in my presence by leaders of the profession, publicly and privately, and knowledge of them is common property in Oregon. I was informed that Dr. Josephi was fitted by both temperament and training to lead in such a movement as would raise the schools, societies and profession above just criticism, and I trust that he will do so. When he reads my article again, after he is restored to his natural good temper, he will find that every line breathes the spirit of kindness, and that every unpalatable truth is told with regret. I quote my concluding paragraph: "My personal experience in Oregon was most pleasant. . . . If a profession with such leaders could only be unified, everything would be possible to it, and it is the hope of arousing them to this duty that I have hesitatingly and reluctantly expressed these criticisms."

J. N. McCORMACK, M.D.

Teaching Nursing by Correspondence.

TOLEDO, OHIO, Jan. 3, 1906.

To the Editor:—The committee on public health and legislation of the Academy of Medicine of Toledo ask for information based on experience which any of your readers may have as to the advisability of teaching nursing by correspondence courses. We wish especially to procure actual experiences which physicians may have had with such nurses. We do not care for arguments as to the logical possibility of such course, but whether in actual practice such nurses are satisfactory, and we wish replies from those who have tried them. These replies will be considered confidential if the writer requests it.

The replies may be sent to the undersigned, the secretary of the society.

WALTER H. SNYDER, M.D.

211 Ontario Street.

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of December, 1905:

ARIZONA.

Slayton, F. H., Clifton.

ARKANSAS.

Ball, C. C., Ravenden.
Bradsher, R. E., Marmaduke.
Grammer, J. B., Searcy.
Jamison, O. A., Elgin.
Jumper, C. E., Dermott.
Morton, J. T., Lexa.
McConnell, J. W., Boonville.
Rightor, H. H., Helena.

CALIFORNIA.

Armstrong, E. C., Pomona.
Ball, J. D., San Juan.
Crees, Robert, Santa Maria.
Crump, J. M., Santa Rosa.
Duncan, A. M., Los Angeles.
Fricke, Richard, Oakland.
Gray, Edward, Eldridge.
Lyle, Annie G., San Francisco.
Mayon, J. L., Vallejo.
Michael, Luther, Ferndale.
Mills, J. M., Larkspur.
Posee, A. C., San Jose.
Radebaugh, J. M., Pasadena.
Reckers, W. A., Placerville.
Schwarz, Jacob, San Francisco.
Wilson, W. L., San Mateo.

COLORADO.

Baker, W. T. H., Pueblo.
Dymenberg, Noa, Rifle.
Ewing, G. F., Vernon.
Hassenplug, W. F., Cripple Creek.
Herr, Ida S., Boulder.
Holmes, R. E., Canon City.
Howe, A. L., Wray.
Kahn, Maurice, Leadville.
Libby, G. F., Denver.
McKibbin, Samuel, Amethyst.
Miller, J. K., Greeley.
Rambo, J. W., Florence.

CONNECTICUT.

Bradley, M. S., Hartford.
Cohane, T. F., New Haven.
Darling, A. E., Killingly.
Dwyer, P. J., Waterbury.
Griggs, J. B., Stamford.
Holbrook, C. W., E. Haven.
Siler, S. L., New Haven.
Wright, G. H., New Milford.

DELAWARE.

Black, J. J., New Castle.
Nickerson, H. A., Magnolia.

DISTRICT OF COLUMBIA.

Bartsch, Anna, Washington.
Digges, J. H., Washington.
Kelley, J. T., Jr., Washington.
Mitchell, J. E., Washington.
Prentiss, E. C., Washington.
Repetti, J. J., Washington.
Snowden, E., Washington.
Sohon, Frederick, Washington.

FLORIDA.

Garner, J. E., Wauchula.
Huddleston, R. H., Miami.

GEORGIA.

Andrews, C. R., Atlanta.
Edie, J. G., Beach.
Fleming, A., Astaria.
Fort, A. G., Lumpkin.
Foster, J. J., College Park.
Goldsmith, J. M., Atlanta.
Johnson, M. M., Waycross.
Kenyon, J. M., Weston.
McCleary, H. L., Royston.
Rogers, F. S., Coleman.
Riley, B. F., Jr., Thomson.

IDAHO.

Ross, H. P., Nampa.
Thompson, R. S., Moscow.

ILLINOIS.

Bruce, W. W., Casey.
Baker, W. E., Chicago.
Brawley, F. E., Chicago.
Brouillett, R. J., Chicago.
Bumstead, C. M., Monticello.
Bowe, Edward, Jacksonville.
Cochran, W. A., Danville.
Cunningham, J. S., Des Plaines.
Colehour, S. P., Mt. Carroll.
Darling, U. G., Chicago.
Donaldson, C. O., Dwight.
Eldredge, R. L., Frankfort.
Fithian, P. H., Fithian.
Feingold, Leon, Chicago.
Fitzgibbon, G., Chicago.
Hand, H. W., White Hall.
Hale, J. I., Anna.
Hogan, T. A., Chicago.
Headland, J., Galva.
Hohmann, W. D., Kewanee.
Katz, B. G., Chicago.
Murfin, W. W., Patoka.
Murfin, J. W., Vernon.
Mai, H., Chicago.
Mackechnie, H. N., Chicago.
Morton, J. B., Ridgefarm.
McCabe, L. C., Chicago.
Patera, Edward, Chicago.
Parkes, C. H., Chicago.
Rainey, G. S., Salem.
Redmond, T. B., Danville.
Rezanka, G. W., Chicago.
Rees, O. H., Ogden.
Stupnicki, M. J., Chicago.
Stackable, W. H., Chicago.
Smedley, N. J., Chicago.
Tieken, J. D., Piper City.
Tunnicliff, Ruth, Chicago.
Walker, H. W., Grantsburg.

INDIANA.

Alkman, E. A., Clinton.
Blount, R. T., Homer.
Blossom, J. C., Mt. Summit.
Boor, M. A., Terre Haute.
Bushaw, B. E., Marengo.
Combs, M. R., Terre Haute.
Evans, C. S., Union City.
Fox, H. A., Gosport.
Gibbs, J. C., Crown Point.
Grover, C. B., Greensburg.
Hall, M. L., Newport.
Howes, J. M., Bowling Green.
Kethcart, N. L., Columbia City.
McFadden, W. C., Shelbyville.
O'Brien, W. M., Danville.
Powell, E. U., Greentown.
Ross, W. H., Veedersburg.
Schoen, P. H., New Middletown.
Staley, T. M., Bicknell.
Tomlinson, C. H., Cicero.

INDIAN TERRITORY.

Garrett, G. H., Sapulpa.

IOWA.

Arthur, S. H., Scranton.
Dennison, J. C., Bellevue.
Hofstetter, George, Lyons.
Lovelady, J. M., Sidney.
Moore, W. E., Derby.
Oshana, Aphasie, Crystal Lake.
Parker, R. H., Storm Lake.
Poore, A. B., Cedar Rapids.

KANSAS.

Emley, S. C., Lawrence.
Hale, B. L., Neal.
Huff, W. D., Westphalia.
Harper, F. A., Pittsburg.
Haning, W. P., Belleville.
Jarrett, M. F., Fort Scott.
Justice, H. S., Hutchinson.
Kirkwood, J. W., Wichita.
McClymonds, R. C., Walton.
Plummer, R. S., N. Topeka.
Warren, L. P., Clearwater.
Weaver, C. D., Galva.
Welch James, Tampa.
Yankey, J. W., Esbon.

KENTUCKY.

Gillespie, B. G., Berry.
Jenkins, W. A., Louisville.
Rhea, R. H. C., Morganfield.
Smith, L. L., Paducah.
Swope, H. S., Ashland.
Thompson, Z. A., Pikeville.
Walters, W. J., Pikeville.

LOUISIANA.

Dossman, R. S., Ville Platte.
Moise, A. B., New Orleans.

MAINE.

Coombs, G. H., Waldoboro.
Howes, L. M., Enfield.
Sullivan, T. D., Calais.
Wing, E. M., North Anson.
Weeks, A. H., Portland.

MARYLAND.

Barnes, W. M., Baltimore.
Chambers, J. W., Baltimore.
Davis, S. G., Baltimore.
Fisher, P. R., Denton.
White, E. H., Cumberland.

MASSACHUSETTS.

Brown, E. M., Springfield.
Bundy, F. E., Boston.
Crofts, N. M., North Adams.
Crockett, E. A., Boston.
Charteris, M. A., Worcester.
Day, H. F., Boston.
Day, C. C., Newburyport.
Dutton, Charles, Wakefield.
Francis, C. S., Brookline.
Farlow, J. W., Boston.
Gates, G. W., Boston.
Hare, C. H., Boston.
Jordan, J. F., Peabody.
Jones, F. E., Boston.
Kirby, J. R., Clinton.
Larrabee, R. C., Boston.
Lowell, A. F., Gardner.
Lecompte, W. A., Boston.
Lavallee, G. O., Lowell.
Little, J. M., Jr., Boston.
Lamoureux J. E., Lowell.
Morrow, C. H., Gloucester.
Mixter, S. J., Boston.
Paul, W. E., Boston.
Pierce, C. W., Boston.
Quinby, W. C., Boston.
Russell, C. B., Boston.
Stickney, G. A., Beverly.
Seelye, R. H., Springfield.
Smith, Theobald, Boston.
Taylor, E. W., Boston.

MICHIGAN.

Blodgett, W. E., Detroit.
Campbell, E. H., Newbury.
Cilley, E. O., Conklin.
Cobb, L. R., Belleville.
Herzer, H. A., Albion.
Hartman, G. J. Muskegon.
Hughes, G. A., Cassopolis.
Harris, R. H., Battle Creek.
King, L. A., Baroda.
MacKenzie, John, Reese.
McCutcheon, W. C., Cassopolis.
McClelland, L. N. French, Benton Harbor.
Nicholson, J. H., Hart.
Oakman, C. S., Detroit.
Planck, E. A., Union.
Post, H. L., Belleville.
Stewart, Morse, Detroit.
Thompson, A. E., St. Clair.
Whitten, W. D., Baltic.

MINNESOTA.

Gosslee, G. L., Wabasso.
Hynes, J. E., Minneapolis.
Jensen, M. J., Minneapolis.
Judd, E. S., Rochester.
Zimbeck, R. D., Montevideo.

MISSISSIPPI.

Clarke, N. L., Meridian.
Elliott, H. R., Shuford.
Hand, R. M., Shubuta.

MISSOURI.

Aufderheide, W. D., St. Louis.
Bond, H. W., St. Louis.
Blair, V. P., St. Louis.
Coffelt, T. A., Springfield.
Houwink, J. J., St. Louis.
Martin, J. C., Kansas City.
Patterson, W. P., Springfield.
Statler, W. K., Oakridge.
Tuholske, M. C., St. Louis.

MONTANA.

Leavitt, E. D., Butte.
Stokes, R. L., Lewistown.

NEVADA.

Heinzmann, W. H., Austin.

NEBRASKA.

Angle, E. J., Lincoln.
Bartlett, W. C., Alma.
Bishop, J. C., Omaha.
Gadbois, A. E., Humphrey.
Hoffman, J. O., Orleans.
Koutsky, J. W., South Omaha.
Lueschen, A. G., Columbus.
Patchin, F. J., Nelson.

NEW HAMPSHIRE

Fernald, Fred, Nottingham.

NEW JERSEY.

Heron, A. M., Lakewood.
Kudlich, W. T., Hoboken.
Werst, N. B., Egg Harbor City.

NEW MEXICO.

Lane, B. E., Las Cruces.
Raschbaum, L. B., Roswell.
Van Arsdel, E. B., Alamagardo.

NEW YORK.

Colby, F. B., Highland Falls.
Danzi, Emanuel, New York City.
Filsinger, F. W., Buffalo.
Hutchinson, J. L., Jamestown.
Higgins, R. P., Cortland.
Tirrell, M. L., New York City.
Trevett, Ira P., West Seneca.

NORTH DAKOTA.

Arzt, P. G., Balfour.
Bailey, F. H., Fargo.
Eede, J. W., Harvey.
Johns, S. M., Velva.
Lindstrom, J. S., Oberon.
Newkamp, H., Fessenden.
Paulson, A. J., Flaxton.
Skelsey, A. W., Fargo.
Windell, H. C., Kenmore.

OHIO.

Bown, H. H., Pleasant City.
Bielle, A. M., Columbus

Blue, N. S., Defiance.
Clouse, G. M., Columbus.
Calkins, T. J., Cleveland.
Daniells, R. P., Toledo.
Exline, C. E., Canton.
Gilliam, C. F., Columbus.
Huntley, J. H., Lima.
Helinick, A. G., Gallipolis.
Hilton, W. S., Pleasant Bend.
Kinnaman, C. L., Cleveland.
Henderson, L., Marysville.
Hedrick, J. S., Dunkirk.
Keyser, John, Cincinnati.
Love, G. R., Toledo.
Lisle, L. M., Columbus.
Litsworth, A. W., Mt. Victory.
Marshall, George, Dell Roy.
Miller, A. T., Shanesville.
Maertz, Charles, Cincinnati.
McCray, Orville, Miamisburg.
McQueen, D. W., Camden.
Powell, O. J., Ashland.
Podesta, J., Cincinnati.
Pritchard, A. L., Nelsonville.
Riley, Josephine, Chillicothe.
Rose, F. W., Port William.
Santee, L. B., Marlboro.
Stevens, E. S., Lebanon.
Stanbery, H., Cincinnati.
Schmoldt, T. J., Cleveland.
Selleck, S. L., Cleveland.
Sanger, D. M., Dayton.
Sippy, A. F., Akron.
Tidball, A. H., Garrettsville.
Weakley, B. M., Cincinnati.
Ward, E. F., Pemberville.
Walton, A. L., Sycamore.
Whitwham, G. P., Toledo.

OKLAHOMA.

Duke, J. W., Guthrie.
Frizzell, J. T., Butler.
Friedemann, Paul, Kiel.
Miller, J. W., Denver.
Mullins, Ira., Hominy.
Overstreet, J. A., Kingfisher.
Stephens, J. M., Hastings, O.
Sexton, C. E., Perkins.

OREGON.

Johnson W. S., Bonanzo.

PENNSYLVANIA.

Blair, T. S., Harrisburg.
Chidester, C. B., Erie.
Evans, E. E., McKeesport.
Fisher, H. M., Jenkintown.
Glenn, J. E., Fairfield.
Githens, T. S., Philadelphia.
Lodholz, Edward, Philadelphia.
Lowry, R. S., Butler.
Moore, R. H., Huntington.
Moore, E. S., Pittsburg.
Neiffer, M. K., Wyncote.
Robison, C. E., Altoona.
Strayer, J. P., Oil City.
Schrade, Anna M., Erie.
Sturgeon, S. D., New Galilee.
Vaux, C. J., Pittsburg.
Ward, J. M., Oil City.
Wells, P. F., Philadelphia.
Walker, W. J., Greensburg.

RHODE ISLAND.

Carpenter, E. G., East Greenwich.
Fletcher, William, Providence.
Hasbrouck, I. D., Providence.
Kelley, J. S. Providence.
Smith, E. B., Providence.
Sullivan, W. G., Providence.

SOUTH CAROLINA.

Black, W. C., Greenville.
Kemp, S. C., Camden.

SOUTH DAKOTA.

Heinemann, A. A., Menno.
McNamee, J. E., Canova.
Parsons, A. W., Sioux Falls.
Wendt, C. L., Canton.

TENNESSEE.

Black, J. M., Knoxville.
Lewis, V. L., Isoline.
Mayer, George, Wartburg.

TEXAS.

Anderson, W. B., Brownwood.
Black, R. C., South Sulphur.
Carman, E. M., Redoak.
Carter, J. T., Leland.
Cole, W. M., Longview.
Cline, W. B., Arnim.
Dorbandt, Thomas, Lampasas.
Fuller, J. E., Sumner.
Foster, J. D., Riesel.
Milner, T. J., Greenville.
Mullennix, A. J., Ft. Worth.
Pendergrass, J. J., Leonard.
Thomas, G. T., Rogers.
Thornton, Z. N., Forreston.
Thompson, W. R., Ft. Worth.
Wallace, B. C., La Rue.
Ward, E. D., Blum.

UTAH.

Bardsley, W. J., Park City.

VERMONT.

Brown, E. T., Montgomery Center.
Coburn, I. S., Milton.
Church, W. G., Burlington.
Jackson, J. W., Barre.
Kenney, J. C., Sharon.
Weston, H. R., Windsor.

VIRGINIA.

Hackley, J. B., Purcellville, Va.
Hill, E. G., Manchester.
Mason, H. N., Petersburg.
Pinkerton, W. A., Alberene.
Rice, S. D., Richmond.
Turman, G. F., Richmond.

WASHINGTON.

Kellogg, W. R. M., Seattle.
Mount, H. A., Waitsburg.

WEST VIRGINIA.

Allen, J. J., Wheeling.
Alkire, J. P., Everson.
Barrows, J. E., Ravenswood.
Dailey, W. F., Terra Alta.
Davis, J. R., Moundsville.
Judy, J. N., Petersburg.
McElfresh, E., Point Pleasant.
Pickering, W. D., Topins Grove.
Peters, A. L., Rievesville.
Peters, E. F., Switchback.
Wilson, T. L., Piedmont.

WISCONSIN.

Broche, A. H., Oshkosh.
Harlow, G. A., Milwaukee.
Jermain, H. F., Milwaukee.
Luce, J. E., Chilton.
North, C. F., Beaver Dam.
Nichols, W. T., Milwaukee.
Stolte, H., Milwaukee.
Vernon, S. G., Madison.
Young, G. H., Elkhorn.

JAPAN.

Pleadwell, F. L., Yokohoma.

Marriages

WILLIAM E. HASTINGS, M.D., Mount Vernon, Ind., recently.

LLOYD H. FEICK, M.D., to Miss Ida Boyer, both of Reading, Pa., December 28.

CHARLES M. ALT, M.D., Baltimore, Ohio, to Miss Minnie De Vaux, December 23.

FRANCIS F. JOHNSON, M.D., to Mrs. Ada Bradley, both of San Francisco, December 10.

JOHN ADAMS MISKEY, M.D., to Miss Esther Allen, both of Philadelphia, January 2.

G. B. FULLER, M.D., to Miss Helen B. Stitzel, both of Loudonville, Ohio, December 27.

WILLIAM W. DURDIN, M.D., to Miss Daisy Sherrill of Columbus, Miss., December 27.

RICHARD LIGHTBURN SUTTON, assistant surgeon U. S. Navy (retired), to Miss Magdalena Igel, at Leavenworth, Kan., January 3.

OSCAR J. HURTH, M.D., to Miss Nora Jochem, both of Cedarburg, Wis., December 11.

WARD J. MACNEAL, M.D., to Miss Mable Perry, both of Ann Arbor, Mich., December 28.

JOSEPH E. MACNEILL, M.D., to Mrs. Louisa A. Bloor, both of Denver, Colo., December 20.

FRANCIS DUNCAN, M.D., Chicago, to Miss Ida Estella Utley of Oak Park, Ill., December 24.

JOHN A. MCCULLOCH, M.D., to Miss Grace Badgett, both of Maryville, Tenn., December 27.

FREDERICK A. RHOADS, M.D., to Miss Amy Howard Blumer, both of Pittsburg, December 21.

PIERRE WILSON, M.D., Dallas, Texas, to Mrs. Daisy Hibbard of Denison, Texas, December 25.

O. H. SWOPE, M.D., Iaeger, W. Va., to Miss Emma F. Kleykamp of St. Louis, December 27.

JOHN H. WEBER, M.D., Akron, Ohio, to Miss Eleanor Smith of Willoughby, Ohio, January 3.

CHARLES S. SKAGGS, M.D., to Miss Nellie E. Dare, both of East St. Louis, Ill., December 24.

WILLIAM M. CHANNELL, M.D., to Miss Florence M. Douglas, both of Oakland, Cal., December 12.

ANDREW P. OVERGAARD, M.D., to Miss Gertrude Freming, both of Fremont, Neb., December 25.

WILLIAM C. VOORSANGER, M.D., to Miss Maude Ackerman, both of San Francisco, December 23.

W. P. STOLTENBERG, M.D., New Liberty, Iowa, to Miss Lovell E. Waite of Iowa City, December 28.

EDMUND M. VAN BUSKIRK, M.D., to Miss Louise Schwartze, both of Fort Wayne, Ind., January 10.

MARK LEWIS EMERSON, M.D., Oakland, Cal., to Miss Alice Folger of Sebastopol, Cal., December 22.

GAINES WORLEY, M.D., St. Augustine, Fla., to Miss Gertrude Ansel of Charleston, S. C., December 20.

EDWARD ANTOINE RICH, M.D., Brigham, Utah, to Miss Ethelwyn Innis of St. Paul, Minn., January 1.

HENRY TERRILL HARRISS, M.D., Madison, Ga., to Miss Lonsie Simmons of Sandersville, Ga., January 4.

CARL H. LUND, M.D., Oklahoma City, Okla., to Miss Elizabeth Clark of Ironton, Ohio, December 27.

JACOB E. LONGACRE, M.D., Weaversville, Pa., to Miss Annie K. Beitel of Catasauqua, Pa., January 3.

HARRY F. HUTCHINSON, M.D., Hulburton, N. Y., to Miss Loda Blass of Spencerport, N. Y., December 21.

JOHN CROCKETT NEWTON, M.D., to Miss Frances May Sanborn, both of San Francisco, December 26.

GIDEON M. FREEMAN, M.D., Seattle, Wash, to Miss Violet Lang of Walla Walla, Wash., December 26.

ALBERT R. RITCHIE, M.D., Dunkerton, Iowa, to Miss Dolora E. Everett of Iowa City, Iowa, December 24.

FRANK A. SWEEZEY, M.D., Wakonda, S. D., to Miss Antonia Huelsman of Sioux City, Iowa, December 25.

HAROLD N. SIMPSON, M.D., Harbor Beach, Mich., to Miss Mildred Lane of Ann Arbor, Mich., December 27.

CORNELIUS A. FRAME, M.D., Cambridge, Ohio, to Miss Helen Mae Espie of Caledonia, N. Y., December 27.

W. EDGAR SHALLENBERGER, M.D., Chicago, to Miss Elizabeth McIntyre, at Bloomington, Ill., December 21.

LEWIS CASS SCHUTT, M.D., Toledo, Ohio, to Miss Elizabeth Bennett Bailey of Detroit, Mich., December 19.

CLARENCE A. REVELLE, M.D., Lutesville, Mo., to Miss Althea Kallmeyer, at New Florence, Mo., December 23.

ROSS MCCURE CHAPMAN, M.D., Watertown, N. Y., to Miss Harriet Cornwell of Ann Arbor, Mich., January 2.

JACOB WINSLOW LONGFELLOW, M.D., Machias, Maine, to Miss Agnes A. Weingartner of Philadelphia, January 1.

JACOB S. SHOEMAKER, M.D., New Lothrop, Mich., to Miss Helena Mae Speer of Corunna, Mich., December 20.

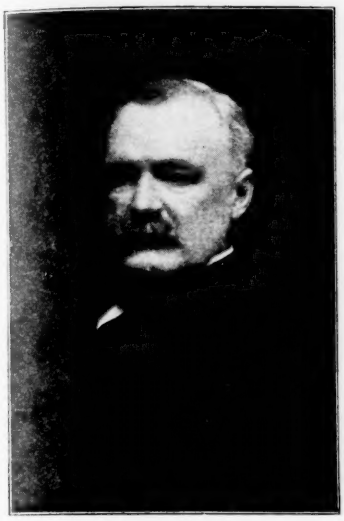
FREDERICK HAZELWOOD, M.D., Parkin, Ark., to Miss Antoinette Grace Van Wormer of Vassar, Mich., recently.

FLOYD PALMER, M.D., Fishkill-on-Hudson, N. Y., to Miss Mary Louise Newman of Amenia, N. Y., December 20.

JAMES W. RICHARDS, M.D., Mechanicsville, Iowa, to Miss Julia Maye Brainard of Wyoming, Iowa, December 27.

THOMAS K. SLAUGHTER, M.D., Belleview, Fla., to Miss Eunice Newton of Guthrie, Ky., at Sutherland, Fla., December 23.

Deaths



Lehman H. Dunning, M.D. Rush Medical College, Chicago, 1872; member of the American Medical Association and chairman of the Section on Obstetrics and Diseases of Women in 1904; member of the Indiana State Medical Society, and president of the Marion County Medical Society; member of the American Association of Obstetricians and Gynecologists; delegate to the Ninth International Medical Congress; professor of diseases of women in the Medical College of Indiana; consulting surgeon to the Indianapolis City Hospital and City Dispensary; chief of staff of and gynecologist to the Deaconess Hospital, Indianapolis, died at his home in that city, January 4, from heart disease, at the age of 55.

August F. Lemke, M.D. Medical Department of the University of Illinois, Chicago, 1895, of Chicago, a member of the American Medical Association, Illinois State Medical Society, Illinois Association of Military Surgeons, Chicago Medical Society, Chicago Pathological Society and other scientific organizations; interne in Cook County Hospital in 1895-1896; pathologist to the Illinois Eastern Hospital for the Insane Hospital until 1898; assistant surgeon of the Third Illinois Infantry, U. S. V., in the Spanish-American War; and afterward captain and assistant surgeon Ill. N. G., assigned to Third Infantry; associate professor of medicine in the College of Physicians and Surgeons, Chicago; at times on the staff of Cook County Hospital, Mercy Hospital and other institutions, a pathologist of great promise, who was obliged to leave Chicago on account of ill health in October, 1904, died at his home in Pasadena, Cal., January 6, from sarcoma of the face and neck, aged 32.

Robert Bruce Stover, M.D. Jefferson Medical College, Philadelphia, 1858, of Richmond, Va., died December 31, in Williamsburg, Va. He served two years as assistant surgeon in the Confederate service. In 1879 he went through a severe epidemic of yellow fever in Memphis. In 1883 he moved to Richmond and established himself in practice, where he lived up to a few months of his death. He was associate editor of the *Atlantic Journal of Medicine*, surgeon to Lee Camp, Confederate Veterans, and to the Confederate Soldiers' Home.

Thomas Y. Aby, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1866; for several years assistant quarantine officer of Louisiana at Quarantine, at the mouth of the Mississippi; assistant surgeon of the Washington Artillery in the Confederate service during the Civil War; acting assistant surgeon, U. S. Army, in the Spanish-American War, and on duty with the Twentieth Infantry at Santiago; twice state senator, died at his home in New Orleans, December 24, from cerebral hemorrhage, after an illness of a year, aged 65.

Orlando Sampson Strange, M.D. New York University, New York City, 1849; member of the College of Physicians and Surgeons of Ontario, 1866; licentiate of the Medical Board of Upper Canada, 1850; mayor of Kingston in 1859 and 1860; alderman for several years; a member of the Ontario Medical Council from 1872 to 1875; surgeon at the penitentiary for 11 years, died at his home in Kingston, Ont., January 2, after a long illness, aged 80.

Thomas Warfield Simmons, M.D. Jefferson Medical College, Philadelphia, 1861; a member of the Medical and Chirurgical Faculty of Maryland; president of the Washington County Medical Society in 1894; county physician from 1892 to 1896; health officer of Hagerstown for several years, died December 30 from uremia two days after an operation for intestinal obstruction, at the Washington County Hospital, Hagerstown, aged 69.

James Frazier Davis, M.D. Hospital College of Medicine, Louisville, Ky., 1880, formerly of Louisville, was found dead, December 24, in Long Lick Creek, near his home in Bardstown Junction, Ky., aged 51. It is supposed that his horse walked over a bluff, dragging the buggy, and that the fatal injuries were received as a result of the fall, as the creek at the point where the body was found was only 18 inches deep.

William R. Blue, M.D. University of Louisville Medical Department, 1888; a member of the American Medical Association; for several years professor of genitourinary and skin diseases in the Hospital College of Medicine, Louisville; a prominent specialist in these departments in Louisville, died at the home of his sister in Rome, Ga., January 1, from paralysis, after an illness of a year, aged 40.

John C. Campbell, M.D. University of the State of Missouri Medical School, Columbia, 1874; a practitioner for 65 years; formerly of Nebraska City, Neb.; some-time member of the territorial legislature, of the territorial council and of the state constitutional convention; for six years a member of the board of education, died at the home of his daughter in Asheville, N. C., December 12, aged 90.

John Hodges Drake, M.D. Medical College of Alabama, Mobile, 1891; formerly of Opelika, Ala., but for six years past, on account of lung disease, a resident of Asheville, N. C.; a member of the American Medical Association; and a specialist in diseases of the eye, ear, nose and throat, died at his home in Asheville, December 15, from pneumonia, after an illness of a few days, aged 36.

Christopher C. Clements, M.D. Jefferson Medical College, Philadelphia, 1864; captain and later brigade surgeon during the Civil War; some-time president of the Greene County (Mo.) Medical Society; president of the Springfield Board of Health, and member of the city council, died at his home in Springfield, December 20, after a long illness, aged 67.

George H. Granger, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1867; a veteran of the Civil War; representative in the Michigan legislature from 1879 to 1882; president of the Bay City board of education for three terms, died at his home in Bay City, December 22, from diabetes, after a lingering illness, aged 64.

George F. Chalmers, M.D. Cooper Medical College, San Francisco, 1894, of Niles, Cal.; health officer of that place for seven years; district surgeon for the Southern Pacific System, and temporary superintendent of the Masonic Home, Decoto, died at the Railroad Hospital, San Francisco, December 26, four days after an operation for appendicitis, aged 37.

Silas Proctor Emes, M.D. University of the Victoria College, Coburg, Ont., 1862; member of the College of Physicians and Surgeons of Ontario, 1866; some-time coroner of Welland County, died at his home in Niagara Falls, Ont., from nephritis, December 26, aged 67.

Thomas P. Coleman, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859; one of the oldest practitioners of Northern Mississippi, died at his home in Oxford, December 27, from injuries received in a railway accident five days before.

Francis Duncan, M.D. Rush Medical College, Chicago, 1900, a member of the American Medical Association and a promising young physician of Chicago, died suddenly from heart disease at San Diego, Cal., January 2, aged 30. He had been married only ten days before.

Joseph Carbert, M.D. University of the Victoria College, Coburg, Ont., 1856; licentiate of the Medical Board of Upper Canada, 1852; member of the College of Physicians and Surgeons of Ontario, 1886, died at his residence in Toronto, Ontario, January 2, aged 79.

Thomas Garth, M.D. Cincinnati, 1864; a veteran of the Civil War; justice of the peace for eight years; coroner of Wright County, Iowa, for 16 years; mayor of Clarion, Iowa, for one term, died from abscess of the liver at his home in Clarion, December 19, aged 70.

Walter R. Francis, M.D. University of Buffalo Medical Department, 1876, of Marion, Ind.; a member of the Grant County Medical Society; once health officer of Grant County, died from paralysis at the home of his son in Buffalo, N. Y., December 28, aged 52.

Theodore Edward Beard, Jr., M.D. Yale University Medical Department, New Haven, Conn., 1897, a member of the American Medical Association and of the Connecticut Medical Society, died at his home in New Haven, January 1, aged 41.

Julius Alexander Caldwell, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1854, a prominent practitioner of Salisbury, N. C., died suddenly at his home in that city, from heart disease, December 21, aged 75.

George W. Corbett, M.D. College of Physicians and Surgeons of Chicago, 1901, died at his home in Plymouth, Wis., December 16, about one day after a runaway accident in which he sustained a severe concussion of the brain, aged 38.

Robert Mitchell, M.D. University of Edinburgh, Scotland, 1859, L.R.C.S. Edinburgh, 1859; for 21 years surgeon to the Dorchester (N. B.) penitentiary, died at his home in Amherst, N. S., December 27, after a brief illness, aged 73.

Arthur Guy Beazley, M.D. Atlanta (Ga.) Medical College, 1866, private and later assistant surgeon in the Confederate service during the Civil War, died at his home in Crawfordville, Ga., December 25, after a long illness, aged 69.

John Henry McFaul, M.D., C.M. University of Trinity College, Toronto, member of the College of Physicians and Surgeons, Ontario, 1888, died suddenly from angina pectoris at his home in Toronto, Ont., December 23, aged 62.

J. A. Sabourin, M.D. Laval University Medical Department, Quebec, 1902, of Point St. Charles, P. Q., died at the Hôtel Dieu, Montreal, December 28, from typhoid fever, after an illness of three weeks, aged 30.

Theophilus Grenier, M.D. Laval University Medical Department, Quebec, P. Q., 1879, health officer of Newton Township, Mackinac County, Mich., died at his home in Gould City, Mich., December 20, aged 54.

D. H. Brewer, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1886, died at his home in Brenham, Texas, December 19, after an illness of nearly four years, from tuberculosis, aged 45.

John R. Atkinson, M.D. University of Nashville Medical Department, 1869, a Confederate veteran, died at his home in Lavinia, Tenn., December 29, from tuberculosis, after a long illness, aged 65.

Thomas A. Brown, M.D. Jefferson Medical College, Philadelphia, 1873, for several years a practitioner of Wilmington, Del., died on his farm near Frederica, Del., December 28, after a long ilness, aged 57.

George W. Doane, M.D. Harvard University Medical School, Boston, 1844, for more than 60 years a practitioner of Barnstable County, Mass., died at his home in Hyannis, December 29, aged 81.

Hiliary D. Bruce, M.D. Atlanta (Ga.) Medical College, 1882, a practitioner for 45 years, died suddenly at his home in Waverly, Ala., December 17, from heart disease, aged 74.

Travis L. Cooper, M.D. Memphis Hospital Medical College, 1902, died at his home in Calooga, Miss., December 26, from tuberculosis, after an illness of two years.

Daniel Booher, M.D. Medical College of Ohio, Cincinnati, 1894, died from tuberculosis at his home in Elizabeth, Colo., December 20, after an illness of four years.

Rollin B. Carter, M.D. Ohio, 1884, of Akron, Ohio, died at a sanitarium in Cleveland, December 23, from sciatica, after a long illness, aged 47.

John J. Cronin, M.D. College of Physicians and Surgeons in the City of New York, 1893, died at his home in New York City, December 3.

DeForrest W. Chase, M.D. Medical School of Maine of Bowdoin College, Brunswick, 1889, died at his home in Boston, December 19.

David R. Davis, M.D. University of Pennsylvania Department of Medicine, 1893, died at his home in Lansford, Pa., January 5.

Charles E. Wentz, M.D. Medico-Chirurgical College, Philadelphia, died at his home at New Providence, Pa., January 3, aged 28.

W. T. Roney, M.D. Medical College of Georgia, Augusta, 1891, died December 16, at his home in Spread, Ga.

George L. Buck, M.D. Marion, Ind., 1889, died at his home in Star City, Ind., December 14, after a long illness, aged 52.

Miscellany

Deaths in India from Wild Animals.—Over 2,000 deaths directly ascribable to wild animals have occurred in India in one year. In addition, 21,880 deaths were entered as caused by snake bites. The official figures show that 88,206 cattle were destroyed by wild animals, 10,736 by snakes. While the government of India makes strenuous efforts to reduce the mortality due to wild animals, only 16,122 were killed in the year. The people of India apparently make little effort to better this condition [owing to religious scruples].—*Medical Age.*

Arsenic in Animals.—An address was read by the Prince of Monaco before a recent meeting of the Paris Société de l'Internat., describing some of the results of his voyages to Arctic regions and other remote parts of the oceans. Arsenic was detected in fish from depths of nine to twelve thousand feet, and also in fish and animals in the Arctic regions, and in animals at altitudes of six thousand feet and more on lonely islands in unfrequented seas. The speaker referred also to scientific findings registered by instruments sent up on kites or balloons from his vessel in ocean wilds. They rose to an altitude of 16,300 meters or nearly 10 miles. He usually has several scientists as guests on his vessel, the *Princess Alice*, which is lavishly equipped for scientific reearch. His "ocean museum" is one of the sights of the Rivera.

Paget's Disease of the Bones.—Menetrier and Rubens-Duval report (*Bull. et Mém. de la Soc. Méd. des Hopitaux*, June 1) a case of Paget's disease of the bones treated with antisyphilitic remedies with success, an arrest of the process being produced. This case confirms the view expressed by M. M. Lannelongue and Fournier as to the hereditary syphilitic nature of the disorder, but seems to prove that acquired syphilis may also be its cause. They refer to another similar case reported by Gaucher in which Paget's disease was materially benefited by hypodermic injections of benzoate of mercury, and still another one reported by Frechon (Thèse de Paris, 1903). They conclude that Paget's disease is not only dependent on syphilis, but that its lesions themselves are syphilitic.

Tuberculous Meningitis.—Claisse and Abrami (*Bull. et Mem. Soc. Médicale des Hopitaux*, May 18), report a case of tuberculous meningitis, verified by inoculation experiments, as well as clinically, terminating in apparent perfect recovery. They consider, therefore, that the absolutely fatal prognosis of this disease must be somewhat modified. At the following seance of the society M. M. Vaquez et Digue reported another case which, if not cured, was very greatly improved and the patient returned to his work. The inoculation, with liquid from lumbar puncture, experiments on a guinea-pig in the earlier course of the disease produced numerous tuberculous lesions and demonstrated bacilli. Six weeks later similar inoculations on two guinea-pigs failed to produce any symptoms, thus indicating that the infection was not as virulent at that time as on the former occasion.

In Memory of Carrion, the Peruvian Martyr to Science.—The local medical society of Lima, Peru, always devotes the 5th of October to the memory of Dr. Daniel Carrion. This year was the twentieth anniversary of his death, and the story of his devotion to science was again related. He was convinced that Peruvian verruga and Oroya fever were one and the same disease, although apparently so different in their manifestations. This assumption was confirmed by experiments on aimals, but they did not convince the medical world. To decide the matter once for all, he inoculated himself with the virus of the verruga, and as the resulting "Oroya fever" developed he wrote a graphic record of the disease as observed in himself. Scheube regards the disease as a severe form of yaws, modified perhaps by the high altitude of the regions in South America where only it occurs, and possibly by malaria.

Poisoning by External Application of Resorcinol.—Kaiser (*Therap. Monatsh.*, October, 1905. p. 540), reports a case in which a patient affected with lupus vulgaris was ordered to apply to the back a resorcinol plaster, 600 sq. cm. (about 10 inches square). Two days later an application was made of 100 gm. (about 3 ounces) of a 50 per cent. resorcinol-zinc oxid ointment. Very soon a severe burning pain was produced, with profuse sweating. The application was removed within an hour, by which time the patient was apparently unconscious, but shrieked furiously and had clonic spasms. The pulse and respiration were much accelerated. These conditions lasted ten minutes, when opisthotonos supervened. Spasms and relaxations occurred every twenty or thirty seconds. After the fortieth spasm the patient went into a quiet unconscious state. In about an hour from the beginning of the convulsive state, the pulse and respirations improved, the reflexes reappeared, and consciousness slowly returned. The urine, voided three

and one-half hours after the application of the paste, was greenish and soon became black on exposure to air. Phenol was detected, but no albumin. In a few days the patient apparently had fully recovered.

Arsenic in Diabetes.—H. Verdalle (*Arch. Gén. de Méd.* No. 23, June 6), concludes, from a series of clinical observations which he publishes, that treatment of diabetes by arsenical chlorinated soda water is very effective, most so in the hyperhepatic form described by Gilbert. It affects both the glycosuria and the urea output, the former often disappearing entirely and the latter tending to return to the normal figure. The other elements of the urine are hardly affected. The general condition is markedly and durably improved and sometimes cure is complete. In every form of diabetes this amelioration is pronounced, and in no case did he observe any accidents imputable to the treatments.

Poisoning by Atoxyl (Arseno-anilid).—Bornemann (*Muench. med. Wochft.*, No. 22, p. 1043), reports the case of a patient suffering from a widely-diffused lichen ruber planus, who was treated by local application of a tar-sulphur ointment and injection of a 20 per cent. solution of atoxyl, beginning with 0.5 c.c. (7.5 minims) and increasing to 2 c.c. (30 minims). The injections were repeated three times a week. The first symptoms appeared after the treatment had continued for two months. They were debility, cardiac weakness, dryness of the throat and enteritis. The patient interrupted the treatment for a short time and then began to use 1 c.c. (15 minims) of the remedy twice a week. In the course of three weeks the following symptoms were manifested: Partial deafness, buzzing noises, burning sensation in the feet at night, mist before the eyes, diminished vision and, finally, amaurosis. The dose was increased to 2 c.c. (30 minims) three times a week, when swelling of the hands, feet and face occurred. After a total of 27 grams of atoxyl had been taken in the course of three months the patient was removed to a hospital and the drug entirely suspended. By the application of zinc ointment the edema was reduced, and the original affection (lichen) cured by the employment of salicylated vaselin, chrysarobin, carbol-sublimate and, finally, by the use of *x*-rays. The amaurosis remained. The ophthalmoscope showed atrophy of the optic nerve. A sensation to light was all that could be perceived, but the pupils reacted well.

Official Medical Fees in Case of Industrial Accidents in France.—The *Presse Médicale* of October 25 gives the full text of the new decree regulating the fees for medical attendance for workmen injured while at work. The patient is allowed to choose his own physician and druggist, but the proprietor of the industrial establishment is not held responsible for a sum above the fees officially established. These fees are 40 cents (2 francs) for each visit to the house when the patient is unable to come to the doctor's office or it is inconvenient for any reason. This fee is increased to 50 cents at places where the usual fee was this amount or more before 1901; in small places of less than 5,000 inhabitants it is reduced to 30 cents. This fee is reduced by 10 cents when the patient goes to the doctor's office. It includes the price of a simple dressing or aseptic bandage. The fee is doubled when the doctor's visit has to be made at a specified hour, and tripled when it is required between 9 p. m. and 6 a. m. When the visit has to be followed by prolonged oversight in the eventuality of complications threatening life, each additional half-hour, to a maximum of five, is counted as a separate visit. Mileage is also allowed the physician when the visit has to be made at a specified hour or at a place where the physician has no regular office, the amount ranging from 20 centimes per kilometer by railroad to 40 centimes by other conveyance (this is about 7 to 14 cents a mile). A special fee of 40 cents is allowed for the first medical certificate, or, in case the lesions are multiple, the fee may be $1. The same amount is allowed, also, for the final descriptive certificate when the patient is dismissed.

The rates for dressings and for minor operations are given as corresponding to the fee for one visit for pulling a tooth, massaging a hand or foot, etc., up to a fee as for ten visits for general anesthesia, punctures of a cavity, followed or not by injections, reduction of luxations not yielding to gentle measures (wrist, lower jaw and knee), reduction of simple fractures of body of humerus, forearm, radius or clavicle, reduction of simple fracture of the lower jaw, amputation of a finger or toe, and extirpation of a hematoma, encysted foreign body or small inflamed bursa. The fees for more extensive surgical operations are graduated as follows: For vaginal hematocele, reduction of fractures of the fibula and for ligature of the radial, ulnar, facial or temporal artery, the fee is from $4 to $7 according to the local rate for visits. For curetting the uterus; tenotomy with suture of the superficial tendons of wrist, ankle, hand or foot; perineorrhaphy not including the sphincter of the anus; simple trephining of the skull; reduction of fractures of wrist or bones of face in or near a joint, the fee ranges from $5 to $8, according to the local rate for visits. The fee is from $6 to $11 for external or internal urethrotomy; uncomplicated traumatic miscarriage; for arthrotomy of the carpus, wrist, ankle, foot, knee or elbow; for ligature of the tibial or peroneal, popliteal, femoral, lingual, carotid, palmar or plantar arteries, and for simple empyema. The fee is $8, $11 or $15, according to the local visit rate, for reduction of a fracture of the body of femur or tibia, knee, ankle, patella, spine or pelvis; amputation of the arm; ligature of the subclavian or axillary arteries. The fee is $12, $15 or $20 for uncomplicated tracheotomy or celiotomy; operation on kidney after injury or laceration of the organ; reduction of fracture of both bones of the leg; arthrotomy of shoulder or hip joint; disarticulation of the foot or ankle, knee or elbow; amputation of the forearm, or leg and for exploratory laparotomy. The fee for disarticulation of the shoulder or ligature of the external iliac is $15, $20 or $26, according to the local visit rate. For disarticulation of the hip or amputation of the thigh the fee is $22, $30 or $40. A sliding scale of fees is given for certain other operations as follows: curetting and scraping bone, $5 to $8; evidement and trephining bone, $8 to $10; cutting and suturing nerves and tendons aside from those mentioned in the first sections of the decree, $8 to $15; retrouterine hematocele, $8 to $15; reduction of fractures of the skull, $8 to $15; reduction of luxations requiring apparatus or force, $8 to $15; large phlegmons and deep abscesses, $11 to $15; empyema requiring resection of ribs, $11 to $20; autoplastic operations, $11 to $20; reduction of fractures in or near the elbow, knee or hip, $11 to $20; operation after rupture of the uterus, $11 to $20; articular resections of foot, ankle, knee or elbow, $15 to $20; complicated tracheotomy, $15 to $25; laparotomy followed by operations on abdominal viscera, $15 to $30; celiotomy with complications (artificial anus, resection of intestine, etc.), $15 to $20; perineorrhaphy aside from that mentioned previously, $15 to $30; resection of the elbow or hip, $15 to $30; Estlander operation, $20 to $30; complicated trephining of the skull, $20 to $30, and reduction of luxations requiring force and casts and involving elbow or hip, $15 to $30. The fees for specialists are also established as follows: An ophthalmologist's examination and simple dressing, 60c.; removal of foreign body and dressing, $1; removal of foreign body in cornea, with keratitis and four dressings, $3; operation of average importance and four dressings, $7, and serious operations, for traumatic cataract, extraction of foreign body in vitreous, of the lens, enucleation, evisceration, iridectomy, etc., and four dressings, $15. Every dressing after the fifth is counted as 60c, to a maximum of twenty dressings. The fee for examination by an otorhinolaryngologist is $1, including a simple dressing; thorough examination of hearing, $2; anterior tamponing of nasal fossa, $1; anteroposterior tamponing of nasal fossæ, $4; removal of a foreign body in ear, nasal fossæ or pharynx, without operation, $2; removal of foreign body in larynx, by endolaryngeal route, $4; surgical removal of foreign body in ear, nose (by the Rouge or a similar operation), $12; surgical removal of foreign body in larynx, requiring laryngotomy, tracheotomy or trephining of the mastoid process, $15.

The account presented by the physician should include the name and address of the physician and also of the patient and of the proprietor of the factory, the date of the accident, a chronologic statement as to all the examinations, certificates, consultations, operations and circumstances which might affect the price, such as night calls, mileage, etc., and the exact denomination of the operations, according to the above tariff, with the sum total of the fees. The medical assistants during a major operation are to be paid at the rate of one-fourth of the fee allowed for the operation, the total thus allowed not to be more than half the fee, no matter how many assistants may have been present. The application of the first dressing or cast is included in the fee. In changing the French franc into dollars and cents, it has been estimated at twenty cents; in reality, it is half a cent less.

Book Notices

METHODS OF ORGANIC ANALYSIS. By H. C. Sherman, Ph.D. Cloth. Pp. 245. Price, $1.75. New York: The MacMillan Co., 1905.

The fact that the greater part of this book is devoted to quantitative methods for analysis of foods and related substances makes the work especially desirable. These methods have been taken largely from official publications and are, therefore, standard. Because of its small volume the book will be convenient.

MATERIA MEDICA AND PHARMACY. By R. W. Wilcox, M.A., M.D., LL.D. Sixth Edition. Cloth. Pp. 624. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co. 1905.

The revision of the United States Pharmacopeia, with many changes and additions necessitated the rewriting of this book, long so popular as "White and Wilcox," and division of the subject in two parts. There is consequently to be a second

volume to be known as "Pharmacology and Therapeutics." Since matters medicinal are now receiving much attention this well-known work will no doubt be appreciated. Its utility as a text-book, especially owing to its condensed form, has long been recognized.

CLINICAL TREATISES ON THE PATHOLOGY AND THERAPY OF DISORDERS OF METABOLISM AND NUTRITION. By C. von Noorden, Part vii. Translated by F. Buchanon, D.Sc., and I. W. Hall, M.D. Cloth. Pp. 211. Price, $1.50. New York: E. B. Treat & Co., 1905.

This little book of 210 pages is a most interesting collection and review of recent contributions to our knowledge of this subject. It is also valuable for the commentary of its illustrious author. His own views and the results of studies coming from his laboratory are fully explained, but properly balanced in his exposition of the work of others. The symptoms and course of the disease are not considered in detail. The first 80 pages are devoted to a review of the various theories which have been propounded to account for the disease. This is undoubtedly the most interesting part of the book. The next chapter is on acetone-bodies, their source, grouping, conditions necessary for their appearance, and the dangers of acetonuria. A chapter on other changes in metabolism and three on general course and prognosis follow. The final chapter deals with treatment, and is a clear and full exposition, the author's great experience enabling him to give the details in a practical manner.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., assisted by H. R. M. Landis, M.D., vol. IV. December, 1905. Diseases of the Digestive Tract and Allied Organs: Liver, Pancreas and Peritoneum—Anesthetics, Fractures, Dislocations, Amputations, Surgery of the Extremities and Orthopedics—Genito-Urinary Diseases—Diseases of the Kidneys—Practical Therapeutic Referendum. Paper. Pp. 367. Price, $6.00 per annum. Philadelphia: Lea Brothers & Co., 1905.

The excellency of this volume is in keeping with those previously issued. It is written by thoroughly qualified men who have the requisite clinical experience to enable them to take from the literature all there is of practical value and present in in a readily accessible and interesting manner. Dr. J. Dutton Steele writes on the diseases of the digestive tract and peritoneum; Dr. W. T. Belfield discusses genitourinary diseases; Dr. J. R. Bradford writes on the diseases of the kidneys, and Dr. J. C. Bloodgood discusses anesthetics, fractures, dislocations, amputations, surgery of the extremities and orthopedics. Under the title Practical Therapeutic Referendum, Dr. H. R. M. Landis writes on new remedies and agents used for medicinal purposes.

Queries and Minor Notes

RECIPROCITY.

To the Editor:—1. Does Georgia accept a Pennsylvania state license without further examination? 2. Whom shall I address regarding registration in Georgia? INQUIRER.

ANSWER.—Regarding both matters write to Dr. E. R. Anthony, Griffin, Ga.

State Boards of Registration

COMING EXAMINATIONS.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, January 18-20. Secretary, J. A. Egan, Springfield.

NEW YORK State Boards of Medical Examiners, Albany, January 30-February 2. Secretary, Charles F. Wheelock, Albany.

NEBRASKA State Board of Health, State House, Lincoln, February, 7-8. Secretary, George H. Brash, Beatrice.

Rules Governing Reciprocity Between New York and New Jersey.

In accordance with the resolution passed at the conference held Oct. 16, 1905, between the educational and medical representatives of the states of New York and New Jersey, the committee appointed for the purpose met Nov. 11, 1905, and formulated the following rules and regulations to govern reciprocity in medical licensure between the states mentioned, on and after Jan. 1, 1906:

1. The basis on which reciprocity shall obtain between the states of New Jersey and New York shall be a license earned on examination in either one of the states.

2. A candidate for indorsement of a medical license must present credentials from the officials of the state board of medical examiners which licensed him showing that at the time of such application for indorsement he is a reputable practitioner of medicine and in good standing in the profession and in the community.

3. When an applicant presents his papers for indorsement to the board of one state and this board has reasonable doubts of the qualifications of the applicant, either personal or professional, said board shall return the certificate of indorsement, together with its reasons, to the board which issued it and ask for a reconsideration of the certification. Where an applicant presents a license issued prior to the establishment of reciprocity, the board to which the application is made may require for its consideration the original papers on which the license was granted, or a certified copy thereof. The original state license only can be indorsed by either board. No application for indorsement of other indorsements will be considered.

4. No person who has been rejected for license by the New York or the New Jersey board shall be privileged to have a license indorsed by either state unless a period of at least six months shall have elapsed since such rejection occurred. Candidates licensed by the New Jersey State Board of Medical Examiners in the years 1901, 1902 and 1903 must have five years of reputable practice subsequent to the earning of their medical degree, before obtaining a consideration of their request by the New York authorities for the indorsement of their New Jersey licenses. This shall not apply to New Jersey licentiates of the years mentioned who fully meet the requirements exacted by the New York State medical laws at that time.

5. The preliminary education required for admission to medical schools shall be the same for both states and the certification of the education department of either state as to the standards maintained by secondary schools or high schools in either state shall be accepted by the education department of the other state. The standards to be required of secondary schools and academies without the states of New York and New Jersey, shall be fully equivalent to those required of the schools within those states and the schools to be registered as maintaining such equivalent standards shall be determined in joint conference between the educational departments of New York and New Jersey.

6. The recognized medical schools registered as maintaining the required standard shall be those on the "approved list" of the education department of the state of New York.

7. Full faith and credit shall be given by the board of each state to the examinations held by the board of the other state.

The committee also recommended that efforts be made to amend the laws of one or both states to annul a number of minor differences which at present in some instances render reciprocity difficult.

California Revocations.—The State Board of Medical Examiners recently revoked the licenses of O. C. Josselyn, H. McGregor Wilson, and L. H. Meadows (alias Weston), who were convicted in the United States District Court of sending matter regarding criminal malpractice through the mails.

Illinois October Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Oct. 18-20, 1905. The number of subjects examined in was 16; total number of questions asked, 160; percentage required to pass, 75. The total number of candidates examined was 61, of whom 52 passed and 6 failed, including 2 not rated and 1 who withdrew. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Chicago Homeo. Med. Coll.	(1899)	76
College of P. and S., Chicago	(1904) 83.6; (1905)	80.4, 85.6
George Washington University	(1905)	88.3
Hahnemann Med. Coll., Chicago	(1889)	75
Harvard University	(1898) 77.6; (1899) 88.2; (1904)	85.3
Harvey Med. Coll., Chicago	(1905)	89.7
Howard University	(1905)	77.4
Illinois Med. Coll.	(1905) 78.1, 79.6, 81.5,	83.5
Jefferson Med. Coll., Philadelphia	(1888)	75
Jenner Med. Coll., Chicago	(1905) 81.3, 82.4,	86.1
Kentucky School of Medicine	(1905)	80.2
Marion-Sims-Beaumont Med. Coll.	(1900) 91; (1903) 87.3; (1904) 81.1.	
McGill University, Toronto	(1905)	82.5
National Med. Coll., Chicago	(1904) 79.7; (1905) 75.6, 78.6,	83.3
Northwestern University	(1905)	88.1
Queen's University, Ont.	(1902) 80.6; (1904)	84.7
Rush Med. Coll., Chicago	(1892) 75; (1903) 84.9; (1904) (1905) 84.4, 84.6, 84.8, 85.3, 85.9, 86.7, 87, 87.4, 87.9, 88, 90.4, 90.4, 93.	89.4;
Western Med. Coll., Ont.	(1904)	83.1
Western Reserve Coll., Cleveland	(1897)	79.3
University of Iowa	(1898)	86.4
University of Louisville	(1905)	81.5
University of Maryland	(1903)	86.2
FAILED.		
American Coll. of Med. and Surg., Chicago	(1905)	70
College of P. and S., Keokuk	(1884)	46.1
Eclectic Med. Inst., Cincinnati	(1903)	73
Illinois Med. Coll., Chicago	(1905)	70
Jenner Med. Coll., Chicago	(1905)	74.6
Keokuk Med. Coll. P. and S., Chicago	(1905)	67

Missouri.—At the examination held by the State Board of Health at Kansas City, Dec. 19-21, 1905, the following questions were asked:

ANATOMY.

1. Describe the stomach. 2. Describe the liver. 3. Describe the pancreas. 4. Name the so-called ductless glands. 5. Describe the spleen. 6. Describe the thyroid gland. 7. What is the abdomen? 8. Name the boundaries of the abdomen. 9. Name the regions of the abdomen. 10. What parts are included in each region?

PHYSIOLOGY.

1. What is the function of the cerebellum? 2. How many refracting surfaces does a ray of light pass through on its way to the retina? What are they? 3. What is the office of the spleen? 4. Give steps in digestion of proteids. 5. Give fetal circulation.

CHEMISTRY.

1. What is a molecule? 2. What is an element, and how many are there? Give illustration. 3. What would be antidotes for combined arsenical and strychnin poisoning? 4. Give difference between chronic and acute form of lead poisoning. What are the sources of each? 5. Give (chemically) steps in manufacture of alcohol. 6. Give chemistry of respiration. 7. What is the chemical composition of milk? 8. Give antidote for phosphorus; also treatment for phosphorus poisoning. 9. Give properties of hydrogen gas. 10. What are the constituents of urine? Give normal specific gravity.

BACTERIOLOGY.

1. Describe *Bacillus pseudotuberculosis*. 2. Give description of Lustgarten's bacillus. 3. Differentiate (bacteriologically) between diphtheria and follicular tonsilitis. 4. What is the method ordinarily used in detecting gonococci? Also culture characteristics. 5. What is a mixed infection? Give example.

PATHOLOGY.

1. Give the structural changes that occur in tuberculous joints. 2. Describe the blood changes in pernicious anemia. 3. Give the pathology of the second and third stages of lobar pneumonia. 4. Discuss cheesy degeneration. 5. Discuss metastatic abscess formation.

MEDICAL PRACTICE.

1. Locate the (normal) apex beat of the heart. 2. What conditions increase the area of heart dullness? 3. Describe and locate the pain in (*a*) appendicitis, (*b*) renal calculus, (*c*) gallstones. 4. Give some of the chief characteristics that differentiate an acute from a chronic form of disease. 5. What is collapse? Mention two frequent conditions in typhoid fever that are attended with collapse and indicate treatment in each instance. 6. Describe (*a*) an intermittent pulse, (*b*) an irregular pulse. 7, 8, 9 and 10. Write a brief description of each of the following diseases, embracing etiology, symptoms and general management: typhoid fever, tetanus, empyema, cystitis.

SURGERY.

1. Define shock and how you would treat it? 2. How would you treat a fracture of the shaft of the femur? 3. How would you treat a Colles' fracture? Describe fracture and treatment fully. 4. Describe an operation for popliteal aneurism. 5. Give symptoms for stone in the bladder of a male. 6. How would you treat hydrocele?. 7. Give methods you would adopt to remove a kidney. 8. Name the luxations of the shoulder joint; symptoms of each and how reduced. 9. Describe erysipelas; (*a*) simple; (*b*) phlegmonous, and treatment. 10. How would you perform external perineal urethrotomy?

OBSTETRICS.

1. Name all the female reproductive organs. 2. Describe the uterus, and give its nerve and blood supply. 3. Name all the signs of pregnancy at the end of second month. What is Braxton-Hick's sign? 4. Name some of the more important diseases of the fetus in utero. 5. What is ballottement? When is it available and how is it performed? 6. How many vertex presentations can we have? Tell how to make the diagnosis in vertex presentations. 7. What is cephalic version? When is it necessary and how is it performed? 8. What is an impacted breech presentation? Give diagnosis and explain method of delivery. 9. Under what circumstances would you suggest podalic version? How is it performed? 10. Describe in full your management of a case of normal labor; (*a*) as relates to mother; (*b*) as relates to child.

GYNECOLOGY.

1. What is subinvolution? Give the results of subinvolution of the uterus. What is its treatment? 2. When is intrauterine irrigation justifiable? Describe the technic of its use. 3. When is ventrofixation of the uterus justifiable? Describe the operation. 4. What is endometritis? Name causes and give treatment. 5. Define (*a*) anemia and give treatment, (*b*) chlorosis and give treatment.

THERAPEUTICS.

1. What causes autotoxemia? Give treatment. 2. What is nocturnal enuresis? Give treatment. 3. Give physical signs and treatment of pericarditis. 4. Give therapeutics of acetic acid. 5. Define anthrax. Give its etiology and treatment. 6. Define styptics and hemostatics. Mention two of each. 7. Mention the sequelæ of influenza or grip. Give treatment. 8. Give symptoms and treatment of acute pleurisy. 9. Give treatment of a case of renal colic. 10. Give treatment of a case of acute gout.

HYGIENE.

1. What are the elementary principles necessary to man's existence? 2. What is the physiologic effect of alcohol (*a*) on the nerve centers; (*b*) on the circulation? 3. Why is it necessary to possess a knowledge of the physical and chemical condition of soil? 4. What is the distinction between non-putrefactive decomposition or decay and putrefaction? 5. How do disease germs produce their characteristic effects on the system?

MEDICAL JURISPRUDENCE.

1. What are the symptoms of poisoning by wood alcohol? 2. How would you distinguish between a male and a female skeleton? 3. Differentiate between infantile paralysis and idiocy. 4. What mental conditions render a testator incapable of making a will? 5. What is pederasty?

New Secretary in Ohio.—The new secretary of the Ohio State Board of Medical Registration and Examination, Dr. David N. Kinsman, Columbus, assumed his new office January 1.

Illegal Practitioner in Wisconsin.—The Wisconsin State Board of Medical Examiners has caused the arrest of Dr. J. L. Barber of Kaukauna for practicing medicine without a license. The complaint was that Barber purchased his diploma for $25 from the Illinois Health University of Chicago.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending January 6, 1906:

Manly, C. J., asst.-surg., leave of absence extended thirty days.

Mabee, James I., asst.-surg., assigned to duty at surgeon of the transport *Sheridan* during the next voyage to Manila.

Greenleaf, Henry S., asst.-surgeon, assigned to duty as surgeon of the transport *Sherman* during the next voyage to Manila.

Reynolds, F. P., surgeon, ordered to Headquarters Department of the Columbia, Vancouver Barracks, Washington, for temporary duty as acting chief surgeon.

Coffin, J. M., asst.-surgeon, leave of absence extended fifteen days.

Talbott, E. M., asst.-surgeon, leave of absence extended thirty days.

Davis, Wm. B., deputy surgeon general, leave of absence extended two months.

Brooks, Wm. H., asst.-surgeon, advanced from grade of first lieutenant to that of captain from January 1, 1906.

Page, Henry, asst.-surgeon, relieved from duty in Philippines Division about March 5, 1905, and will proceed to San Francisco, Cal., where he will report to the Military Secretary for further orders.

Williams, A. W., asst.-surgeon, assigned to duty as surgeon of the U. S. Army transport *Meade* during the next voyage to Manila.

Kuhn, Charles F., contract surgeon, returned to Fort Lawton, Washington, from leave of absence, ordered to Fort William H. Seward, Alaska, for temporary duty.

Rietz, Hugo C., dental surgeon, granted leave of absence for twelve days from Fort Sheridan, Ill.

Bernheim, Julien R., Dental surgeon, left Port Porter, N. Y., for Plattsburg Barracks, N. Y., for duty.

Lauderdale, Clarence E., dental surg., left Fort Sam Houston, Texas, on leave of absence for ten days.

Carpenter, Alden, dental surgeon, left Fort Flagler, Washington, and arrived at Vancouver Barracks, Washington, for duty.

Daywalt, George W., contract surgeon, reported for duty at his new station, Fort De Soto, Fla., after leave of absence.

Wertenbaker, Clark L., contract surgeon, left Madison Barracks, N. Y., on leave of absence for one month.

Hereford, John R., contract surgeon, relieved from further duty in the Philippines Division, and ordered to Fort Moultrie, S. C., for duty, at the expiration of his present leave of absence.

Jones, George H., contract surgeon, order for Fort Moultrie, S. C., for duty, at the expiration of his present leave of absence.

Jones, George H., contract surgeon, order for Fort Moultrie, S. C., revoked; at expiration of present sick leave of absence, will proceed home, Toledo, Ohio, for annulment of contract.

Pinquard, Joseph, contract surgeon, left Fort Leavenworth, Kan., on leave of absence for ten days.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending January 6:

Campbell, R. A., acting asst.-surgeon, appointed acting assistant surgeon from January 9.

Hart, G. G., acting asst.-surgeon, appointed acting assistant surgeon from January 10.

Block, W. H., acting asst.-surgeon, appointed acting assistant surgeon from January 12.

Herndon, C. G., medical inspector, having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service, from December 15, 1905, under provision of Section 1453, Revised Statutes.

Murphy, J. F., asst.-surgeon, ordered to the naval recruiting station, Omaha.

Winn, C. K., acting asst.-surgeon, detached from the naval recuriting station, Omaha, Jan. 24, and ordered to the naval hospital, Washington.

Miller, J. T., acting asst.-surgeon, appointed acting assistant surgeon from January 9.

Schetky, L. O., pharmacist, appointed pharmacist December 27, 1905.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending January 3:

Wilson, R. L., P. A. surgeon, bureau letter of Dec. 1, 1905, granting P. A. Surgeon Wilson fifteen days' leave of absence amended so as to grant thirteen days' leave only.

Berry, T. D., P. A. surgeon, directed to proceed to Tampa Bay Quarantine, Mullet Key, Fla., and assume command of the service, relieving Asst.-Surgeon R. E. Ebersole.

Lloyd, B. J., asst.-surgeon, assigned to duty in the office of the United States consulate at Guayaquil, Ecuador.

Wightman, W. M., asst.-surgeon, relieved from duty at San Francisco Quarantine Station, and directed to proceed to Callao, Peru, for duty in the office of the United States Consulate.

Lyall, R., acting asst.-surgeon, granted three days' leave of absence from Dec. 26, 1905, under Paragraph 210, Regulations.

Neves, George, pharmacist, granted leave of absence for nineteen days from Jan. 1, 1906.

BOARD CONVENED.

A board of officers was to meet at the Bureau, Dec. 28, 1905, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Asst.-Surgeon-General J. W. Kerr, Chairman; Asst.-Surgeon J. W. Trask, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended January 6:

SMALLPOX—UNITED STATES.

California: San Francisco, Dec. 16-23, 3 cases.
Florida: Jacksonville, Dec. 23-30, 5 cases.
Kentucky: Covington, Dec. 23-30, 1 case.
Louisiana: New Orleans, Dec. 23-30, 6 cases; Shreveport, 1 case.
Maryland: Baltimore, Dec. 23-30, 11 cases.
Missouri: St. Louis, Dec. 23-30, 1 case.
New York: Niagara Falls, Dec. 23-30, 1 case.
Ohio: Dayton, Dec. 23-30, 1 case.
Pennsylvania: Lancaster, Dec. 2-9, 1 case.
Wisconsin: Milwaukee, Dec. 2-9, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, Nov. 11-18, 2 cases.
Chile: Antofagasta, Nov. 12-26, 42 cases, 9 deaths; Coquimbo, Nov. 9-23, 15 cases, 4 deaths; Iquique, Nov. 26-Dec. 2, 10 cases, 6 deaths; Valparaiso, Nov. 15-22, 100 cases, 25 deaths.
China: Shanghai, Nov. 30, present.
France: Paris, Dec. 2-16, 48 cases, 5 deaths.
Gibraltar: Dec. 10-17, 1 case.
Great Britain and Ireland: Drogheda, Dec. 2-9, 1 case; Hull, 3 cases.
India: Bombay, Nov. 28-Dec. 5, 1 death; Calcutta, Nov. 18-25, 4 deaths; Karachi, Nov. 26-Dec. 3, 1 case; Madras, Nov. 25-Dec. 1, 7 cases.
Italy: General, Nov. 30-Dec. 14, 36 cases; Catania, Dec. 7-14, 1 death.
Mexico: Tuxpam, Dec. 19-26, 2 deaths.
Russia: Odessa, Dec. 2-9, 12 cases, 7 deaths; St. Petersburg, Nov. 18-Dec. 2, 7 cases.
Spain: Cadiz, Nov. 1-30, 1 death; Santander, Dec. 10-17, 4 cases; Seville, Nov. 1-30, 1 death.

YELLOW FEVER.

Cuba: Habana, Dec. 27-29, 2 cases, 1 death.
Mexico: Merida, Dec. 17-23, 1 case, 1 death.
Panama: Colon, Dec. 7-14, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, Nov. 11-18, 8 cases, 10 deaths.

CHOLERA—FOREIGN.

India: Calcutta, Nov. 18-25, 86 deaths; Madras, Nov. 25-Dec. 1, 6 deaths.
Russia: Government of Lomza, Nov. 23-Dec. 6, 12 cases, 3 deaths; Government of Siedlec, Nov. 20-26, 7 cases, 2 deaths.

PLAGUE—FOREIGN.

Africa: Cape Colony, Port Elizabeth, Nov. 11-18, 1 case.
China: Hongkong, Nov. 18-25, 1 case, 1 death; Niuschwang, Nov. 30, Present.
Japan: Formosa, Nov. 1-30, 2 cases, 2 deaths.
India: General, Oct. 28-Nov. 4, 4,356 cases, 3,090 deaths; Bombay, Nov. 28-Dec. 5, 7 deaths; Calcutta, Nov. 18-25, 22 deaths.
Peru: Antofagasta, Nov. 12-26, 9 cases, 5 deaths.

Medical Organization

What Can the County Society Do?

(*Continued from page 61.*)

II. MEETINGS TO WHICH THE PUBLIC IS INVITED.

A number of societies have of late derived great benefit from meetings to which were invited the lawyers, the ministers, public officials, the women, or the public in general. At the meetings arranged for Dr. McCormack in Texas and other states this plan has frequently been followed. The public should know of every reason for the organization of the medical profession. There is nothing to conceal. The objects are all, either directly or indirectly, calculated to promote the public welfare. It is wise to take the public fully into our confidence. Physicians are not combining to raise fees or to take advantage of the layman. The public should be taught at these meetings that good medical fees mean good physicians. When the physician is well paid his *clientèle* should insist that he continue his medical education by some form of postgraduate work occasionally. If the fees are too small the physician can not pursue his studies adequately.

At such meetings—and several can be profitably held during a year—another pertinent topic would be a full discussion of patent medicines, their evils and dangers. The material gathered by THE JOURNAL, the Council on Pharmacy and Chemistry, by *Collier's* and other lay journals can be drawn on for papers to open the discussion. Meetings of this sort, including appeals to the public to aid in securing the passage of good pure food and drug laws, would be timely this winter just as soon as they can be arranged. At such meetings there can be reference to the plan to have a federal department of health and really effective state sanitary organizations. Epidemics can profitably be considered, especially with reference to modes of conveyance of infections. There is hardly a community in which water supply would not be a timely subject, and everywhere there is need to spread our knowledge of the benefits of scientific ventilation of houses and of the surpassing value of fresh air. Few physicians are yet prepared to discuss cooking in a way to impart needed information, but wherever there is one he can do a world of good, and it is certain that physicians are to be compelled to study methods of cooking and of preparing all manner of foods if they are to come up to the new standards of usefulness.

At one such joint meeting it will in most places be beneficial to consider at length the subject of medical ethics. The public will welcome information as to the relations of medical men to each other and to the public. Other topics will suggest themselves. It is important to note that if the society, through its "Committee on Relations with the Press," has previously brought the editors to sympathize with its purposes, these public meetings will have an extended influence through the reports of them that the papers will gladly publish if considerately approached.

III. PROPRIETARY MEDICINES.

An important and timely subject of discussion is that of proprietary medicines, their hidden composition, and the fradulent claims made for them. A good text for the discussion would be a sentence by Samuel Hopkins Adams in one of his *Collier's* articles: "Ignorance and credulous hope make the market for most proprietary remedies." He wrote of the public and of patent medicines, but recent exposures in THE JOURNAL show that the observation finds only too ready application to the medical profession. In each society there should be full discussion of remedies whose real formulas are concealed and which physicians are asked to prescribe because some one says they are good. The opening paper might recount the work of the Council on Pharmacy and Chemistry on the acetanilid compounds and Mr. Adams' record of the dangers of their use. The discussion would naturally include reference to the misleading "literature" of proprietary manufacturers.

Of course, the practical object of such a meeting would be the arousing of a strong sentiment against prescribing drugs that are fraudulent or that are "boosted" by false claims. Agreement should be reached to refuse to prescribe any remedies that are anywhere advertised to the public or preparations whose container or wrapper contains full directions for the public's use.

As a co-ordinate topic one member might present a paper on methods of writing prescriptions of simple pharmacopeial remedies that will fully meet all the indications of the proprietary articles and of the various imitations of them that crowd the market.

(*To be continued.*)

Society Proceedings

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Fifteenth Annual Meeting, held in Kansas City, Mo., Dec. 28-29, 1905.

The President, DR. H. D. NILES, Salt Lake City, Utah, in the Chair.

Officers.

The following officers were elected for the ensuing year: President, Dr. Malcolm L. Harris, Chicago; first vice-prest., Dr. A. L. Wright, Carroll, Iowa; second vice-prest., Dr. C. Lester Hall, Kansas City, Mo.; secretary-treasurer, Dr. Arthur T. Mann, Minneapolis, Minn.

Salt Lake City, Utah, was selected as the place for the next annual meeting.

Transvesical Operation for Prostatism in Aged Males.

DR. CHARLES E. BOWERS, Wichita, Kan., said that more conservative and rational operations on these patients would yield better results and lower the mortality per cent. An exact diagnosis in many cases can only be made on suprapubic exposure of the vesical outlet. The suprapubic operation can be done with greater exactness and will yield better results than the infrapubic in morbid conditions in the male, as has been

the case in the female pelvis. The suprapubic route is as rationally indicated for the relief of prostatic obstruction at the urinary outlet as it is in vesical calculus. The perineal operation offers only 30 per cent. of cures, with a mortality of 7 per cent., and a 50 per cent. chance of having exchanged one urinary difficulty for another, and not infrequently a lesser for a greater one. The transvesical operation entirely relieves all who survive it of their urinary trouble, if it is due to obstruction in and about the vesical outlet, except when they are carcinomatous in character, without sequelæ, and with the improved operative technic of to-day no greater mortality.

DISCUSSION.

DR. HENRY T. BYFORD, Chicago, thinks hypertrophy of the prostate is due to some irritation; that it can not come entirely from age alone or from sclerotic changes which occur with age. In some cases of enlarged prostate he thinks there is a gouty diathesis, and that, perhaps, the treatment recommended by Fletcher, reducing the calories from 3,000 to 1,500 and dieting the patient a little, might obviate the necessity of suprapubic cystotomy in some cases.

DR. JAMES E. MOORE, Minneapolis, did his first prostatectomy suprapubically twenty years ago, and as it was done at that time it was a bloody, blind and unsatisfactory operation. When perineal prostatectomy was suggested and practiced so successfully a few years ago, he took it up and has been advocating it ever since. He maintains that there are certain cases that can be operated better by the suprapubic route as it is done at the present time. However, in his judgment, a surgeon is not broad-gauged, he does not do the best work he can do, until he performs both operations. He believes the perineal route is the choice in the vast majority of cases.

DR. W. W. GRANT, Denver, maintains that in the average case the perineal operation is the more suitable one. In cases in which there is pus, hyaline and granular casts the perineal route is indicated. The dirty cases can be better and more safely operated through the perineum; the clean cases by suprapubic cystotomy by modern methods.

DR. J. W. ANDREWS, Mankato, Minn., believes there are selected cases which should be operated by the transvesical route, but in the majority of instances he thinks the perineal route is the better. He has operated 11 times, with one death. One of the operations was done suprapubically. He found it difficult, unclean, and was unable to get good drainage. Lack of drainage is one objection to the suprapubic route, as it is not and could not be as good as it is through the perineum.

DR. M. L. HARRIS, Chicago, said that when one attempts to generalize from a few cases in surgery, the generalizations are always wrong. The essayist generalized from 12 cases that the suprapubic route is the only one to adopt, consequently he thinks he is wrong. There are many cases in which a good and thorough operation can not be done suprapubically. There are also many cases in which the best operations can only be done suprapubically; consequently, the surgeon must select the best operation for the particular case. Every case of prostatism should be diagnosed accurately before an attempt is made to select the method of operation, and the surgeon can only make such a diagnosis when he employs all the means at his command, and one of these is a thorough cystoscopic examination.

Observations on Renal Surgery.

DR. D. W. BASHAM, Wichita, Kan., said the methods of Jacobson and Edebohls, give permanent results, so far as anchoring the kidney is concerned, but the kidney is fixed too low in the loin, too far from the center of the vertebral column, and too near the anterior wall of the abdomen. There are many operations which anchor the kidney permanently, but which are open to objection from the standpoint that the organ is not held in the natural position. Surgeons do too many nephropexies without making a thorough and painstaking effort to ascertain the conditions of the kidney, its pelvis and the upper part of the ureter.

DISCUSSION.

DR. WILLIAM JEPSON, Sioux City, Iowa, believes there exists a range of mobility of nearly an inch by every kidney that is normally placed. Each case of movable kidney has to be considered by itself. A certain number of them have to be fixed. He is not a firm believer in decapsulation of the kidney, for the reason that it has been demonstrated experimentally that if a kidney is decapsulated a new capsule is formed in the course of three or four months, and the amount of blood supply the kidney receives from the new source during the time it exists is not sufficient probably to maintain vitality.

DR. A. W. ABBOTT, Minneapolis, Minn., said that in a series of over 2,000 examinations only a very small number of kidneys were felt beyond the limits described in text-books, but this is not in accord with clinical experience. Very few of these patients present any symptoms referable to the position of their kidneys, largely due to the fact, he believes, that the upper part of the ureter falls with the falling of the kidney.

DR. C. W. OVIATT, Oshkosh, Wis., said that occasionally it is necessary to operate on cases of movable kidney. If an operation is undertaken, surgeons should profit by the teaching of Harris of obliterating the space beneath the kidney rather than trying to suspend the organ alone either by the fibrous or fatty capsule. If one simply suspends it, undoubtedly there will be a recurrence of the displacement.

DR. A. E. BENJAMIN, Minneapolis, laid down rules for fixing the kidney. One is, when it shows evidence of hydronephrosis due to a faulty position of the kidney or to a faulty position or kinking of the ureter, fix but do not allow free drainage. Another is, where there is an enlarged kidney, congested or dilated, and where it is tender, fix the kidney. Another condition which calls for fixation is where the kidney seems to produce obstruction of the alimentary canal, either of the colon or duodenum and accessory organs, such as gall-bladder apparatus, the common bile duct, etc. In such cases the kidney is prolapsed, adherent down in the pelvis, and the patients are troubled with obstipation, and by putting the kidney in position and relieving the adhesions the symptoms will partially or entirely disappear. Patients with a dilated condition of the stomach and a diseased condition of the gall bladder, when apparently due to loose kidney, are sometimes benefited if their cases are taken early.

Carcinoma of Descending Colon.

DR. W. W. GRANT, Denver, said that the rectum is the most frequent seat of intestinal cancer. The descending colon is next in order. Cancer of the colon is more common in men; it is not common under 30 years of age. It is primary and circumscribed. Metastasis and constriction are late occurrences. Chronic indigestion, occasional diarrhea and mucous discharges are suspicious symptoms. Ulceration is a late occurrence. Floating kidney and membranous colitis may exist a long time without producing marked symptoms or seriously disturbing the health. It is less malignant than the same disease of the stomach or rectum. It is not painful until late. Stenosis is not attended with striking symptoms until obstruction is complete. Mild malignancy and late infection demand radical operation. More care is necessary in examination at an early period, in order to detect disease.

DISCUSSION.

DR. I. B. PERKINS, Denver, narrated the case of a woman, 62 years of age, in whom there was a tumor in the region of the cecum, supposed by the physician who had charge of the case to be an appendiceal abscess. It was very hard. There was vomiting of fecal matter and had been for twenty-four hours. He made a long incision in the right rectus, and on examination found a hard tumor, but no pus. The appendix was caught in the mass, also the ileocecal valve and a portion of the cecum. He resected the intestine and closed the end of the colon by the Connell suture, then implanted the ileum into the upper portion of the wound. The patient did well, except that there was a slight leakage at the outer and upper portion of the anastomosis and a very small fecal fistula.

DR. A. W. ABBOTT, Minneapolis, has seen three cases of intussusception. He thinks intussusception occurs in cancer of the large intestine oftener than in the small. He has never seen a case in the small intestine, but has no doubt it may occur. He thinks it is wrong to make an immediate anastomosis in these cases. A colostomy should first be made, be-

cause the condition about the cancerous area is so extreme that the parts will not unite if one attempts to sew them.

DR. J. E. SUMMERS, Omaha, said that he had found cancer everywhere in the large intestine, except at the hepatic flexure. In dealing with carcinoma of the transverse colon it is necessary to manipulate the gastrocolic omentum, and unless this is done with the greatest gentleness one is apt to have a complication following the operation which may be serious, namely, hemorrhage into the stomach. His attention was first directed to this complication some years ago following an operation for incarcerated umbilical hernia, in which it was necessary to remove considerable portions of the omentum, and the manipulations were rather rough. The operation was proceeded with without any special difficulty, but it was followed in two hours by profuse hemorrhage from the stomach, from which the patient died.

Choice of Ligature and Suture Material in the Surgery of the Peritoneum.

DR. H. G. WETHERILL, Denver, no longer uses non-absorbable ligature or suture material for purely serous surfaces. The absolute sterilization of catgut is no longer difficult, and it is now realized that so-called catgut infections usually have their origin in a contamination of the gut through handling or in allowing it to come in contact with unclean surfaces or substances in or about the wound. The chromicizing process prolongs the life of even the smaller strands to any desired time, providing the mucous surfaces or secretions are not in contact with it. These features make of catgut an ideal suture and ligature material for intraperitoneal use, and all that becomes necessary is the exercise of due care and skill in the selection of the catgut and the application of sutures and ligatures and the making of knots. So far he has never had a secondary hemorrhage or other accident from the use of catgut, either in the way of a slipping knot or a too rapid absorption, and he believes this immunity from accident to have been due to the exercise of extreme care in its application.

For about three years he has had great satisfaction in using the Downes electro-thermic cautery clamp in selected cases, thus doing away with all ligature and suture materials around pedicles. For vaginal hysterectomy, particularly in cancer of the uterus, it is ideal. It promotes rapidity and safety in the work, and gives much greater security against the danger of recurrence in early cases. Patients operated on with the Downes clamp by either the vaginal or abdominal route have smoother and more rapid recoveries, and noticeable freedom from the intense pain and backache so common after all pelvic operations when the terminal nerves of this region are left for days or weeks in the bight of a securely tied ligature or closely applied suture. He has had one or two experiences with the Downes clamp, however, which lead him to believe that there is increased danger from thrombosis and embolism after its use, occurring occasionally several weeks after operation, and until this doubt is settled he would exercise great care in the selection of the cases on which it is to be used.

A New Technic for Breast Amputation.

DR. JABEZ N. JACKSON, Kansas City, Mo., described a new technic for use in radical operation for carcinoma of the breast. His experience is limited to eight cases. He emphasizes the following advantages: (1) The flap forms a covering for the chest defect, as a rule, without any tension, and thus almost entirely obviates the necessity of grafting, which is so frequent in other methods. He has not found any case operated on by his method that requires grafting. This is not intended to cover cases where there has been extensive previous ulceration or where one can not get healthy tissue for a flap of any character. (2) The drawing of the skin up to the arm does away with the fossa axillarius, and thus with the large space which nature would have to obliterate by the formation of scar tissue with the resultant pressure on the axillary vessels and nerves. (3) The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large number of instruments in one's way. He has in no instance used more than one dozen forceps in this operation, and can usually do the work with about six. The operation is thus shortened, so that, as a rule, he finds that to complete it requires from forty minutes to one hour or thereabouts. In fact, personally, he has never run beyond one hour, even doing the operation slowly, as he has in most cases, for the purpose of demonstrating this new technic, and he has done the operation in a period of time as short as forty minutes. (4) The most noticeable feature to the onlooker, when the operation is done, is the marked absence of hemorrhage, so that it can almost be called a bloodless operation. (5) The entire technical portion of the operation is completed before the chest is exposed by the removal of the breast; therefore, long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon as the breast is removed, the surgeon is ready to close the wound.

Fractures About the Elbow Joint.

DR. W. D. HAINES, Cincinnati, Ohio, said that the open method of treatment is to be commended in all cases of extensive joint involvement. After freely exploring the joint cavity, freeing it from clot, removing detached spicula, and fixing the fractured fragments, a strip of fascia from the arm may be inserted betwen the joint surfaces after the method of Murphy in excision, or the Mosetig bone filling may be used, with a view to preventing adhesions until sufficient repair has taken place to permit of passive motion. The operation is completed by suturing the capsule, fascia, nerves and skin with ample provision for drainage. The arm should be dressed in the fully extended position, placed on an incline and a light weight applied. This position and dressing should be changed at the end of one week. After light massage the arm is redressed at a slight angle, and permitted to remain for four or five days, when it is changed to as nearly a right angle as possible without paining the patient too severely. Subsequent treatment consists of massage and passive motion every third day for a period of three weeks. The author gives precedence to local pain and tenderness over crepitus in diagnosis. The use of weights to overcome muscular rigidity permits of infiltration, diminished elasticity, interfering rather than assisting in the reduction of these fractures. The proper treatment of pain and swelling accompanying fracture is early reduction and the application of extension, ice, or other adjuvants deemed advisable. Immediate amputation is reserved for those extensive crushing injuries, such as bumper wounds, in which the circulation and joint are so badly damaged as to be beyond all hope of repair. The author expressed the opinion that fractures about the elbow joint have been overtreated in the past.

Treatment of Varicose Veins.

DR. C. H. MAYO, Rochester, Minn., said that the various operations in use at the present time are necessary from the diverse conditions and symptoms manifested by the disease. The condition is probably from a defect in the vein walls, valves or enervation. The Trendelenburg operation is deservedly popular, especially for cases of vicious veinous circle of the deep and superficial veins of the thigh. Enucleation of the veins in a subcutaneous manner through several short incisions is a satisfactory treatment for the majority of cases. The subcutaneous removal of the internal saphenous from above at the side of and below the knee, by destroying the main superficial channel and deep communicating branches, is the best method, accomplishing in one operation all that can be obtained by either the Trendelenburg above or the Schede below. Goerlich's report shows 84 per cent. of operations as satisfactory, and 16 per cent. as failures. From experience in 184 cases this seemed a fair statement of the late results from the various methods employed at present, except in the percentage of failures. Dr. Mayo thinks 16 per cent. is too high, as many of those not satisfactory are much improved over their former condition.

Undescended Testicle.

DR. A. E. BENJAMIN, Minneapolis, said that the causes of undescended testicle may be due to improper development of the organ, to a rudimentary vaginal process, to peritoneal adhesions between the testicle and bladder or intestine, and to obstruction of the canal. The testicle may be found any-

where along its course of descent to a point just outside the external ring. Hernia is a common complication of this condition. The organ will not develop as well when located at any point above the scrotum. The possible sterility of the crytorchid and the frequency of malignant, tubercular and traumatic disturbances, complicating this condition, all argue for an early operation to place the gland in its proper location. The operation for undescended testicle has been perfected in the last few years. It has been demonstrated that by careful dissection and an occasional sacrifice of the spermatic vessels the organ will remain in the scrotum.

The Free Interval in Meningeal Hemorrhage.

DR. F. GREGORY CONNELL, Salida, Colo., reported two cases, one of which he said was quite usual, with an interval of two hours, in which recovery followed operation. The other was one in which the patient retired for the night, five hours after a slight trauma, and was found dead in the morning. Autopsy revealed a fracture, with a large extradural clot from the lateral sinus. This second case was not very rare; but in 80 cases collected by the writer only 2 similar instances were encountered. The free interval is defined as a practically symptomless period of consciousness, which follows a primary, transitory unconsciousness; and precedes a secondary, increasing and permanent loss of consciousness. This condition is usually found in association with a head injury. The cause of the bleeding is usually traumatism, with or without fracture. The length of the free interval is studied, in an analysis of the 80 cases, the average length being thirty-five hours. The typical train of events in a meningeal hemorrhage is (1) trauma; (2) concussion, unconsciousness; (3) consciousness, free interval; (4) compression, unconsciousness, but this may be variously modified. In the diagnosis the focal signs are of more value than evidence of injury. The occurrence of collateral hemiplegia must be remembered. Fracture of limbs, previous paralysis or congenital attachment of the iris has caused confusion in diagnosis. Contusion or laceration of the brain, abscess, fat embolism and other conditions may closely resemble meningeal hemorrhage.

In the 80 cases collected, 52 were operated on and 28 were not. After operation there were 39 recoveries and 13 deaths. Without operative interference, 4 recovered and 24 died.

Effects of Osmic Acid Injections.

DR. JOSEPH RILUS EASTMAN, Indianapolis, Ind., said that the injection of ten drops of osmic acid in a 2 per cent. solution into sensory nerve trunks is safe. The likelihood of irritation of the kidney, however, should not be forgotten in cases exhibiting kidney lesions. Injections into the inferior dental or other nerves should not be made through the mouth, as infection of the wound and necrosis may result, with consequent failure in the action of the acid. Immediate relief should not always be expected, notwithstanding that the cases of Bennett and Murphy were all immediately relieved. None of the writer's cases, even those in which the acid was accurately injected into the nerve trunks and into the perineural fat, was promptly relieved, relief coming in from one to two weeks.

There is very little doubt but that the stretching of the nerve trunk incident to the injection is productive of good, supplementing, as it does, the action of the acid. There is no good reason why the stretching should intentionally be avoided, except, perhaps, for experimentation. In the case of small nerves, it will be found exceedingly difficult to inject directly into the nerve trunk, that is, the needle eye will pass to the distal side of the thread-like nerve, or perhaps not enter the nerve substance at all, or, notwithstanding the utmost care used, the fibers may be teased apart by the needle point so that the fluid will simply be spilt about the nerve. In such a case, in order to bring the acid in contact with all of the fibers, it is wise to clip the nerve so that the end may be bathed in the fluids. A general anesthetic should be administered so that neurectasy or section of the nerve may be practiced, if desired.

Eastman's experiments have shown no other changes in the nerve tissues as the result of injections of osmic acid than the disintegration of fat and oil globules in the perineural space and in the white matter of Schwann. The degenerations appearing in the nerve itself are only such as may be attributed to nutritional changes and exposure, the indirect result of the selective action of osmic acid of destroying fat. There is no reason why this fat should not be restored, and the nerve again become capable of transmitting sensation, that is, theoretically the neuralgia may return after injection of osmic acid. Osmic acid injections are uncertain in effect as to the cure or relief of neuralgia. A large percentage of cases of neuralgia may be relieved for months by osmic acid injections. The injection of osmic acid for the relief of tic douloureux is quite justifiable, even if it should become necessary to repeat the injections at intervals of a few months, particularly in view of the unfavorable results of the so-called radical operation. The local irritation produced by the acid and the remote toxic and irritant effects are not serious in their consequences and have no meaning as to the effect of the osmic acid in relieving neuralgia. The solution of osmic acid should be made fresh for each operation, as deterioration is rapid.

Twentieth Century Surgical Problems.

DR. H. D. NILES, Salt Lake City, Utah, selected this subject for his presidential address. No one who has kept in touch with recent experiences in the surgery of the brain, lungs, pancreas, spleen, peritoneum and other organs can escape the conviction that, with a clear, definite idea of the physiology of these parts, the result of surgical endeavors will be infinitely more satisfactory than we are able to obtain with present knowledge. In brain surgery many failures can not be charged to lack of operative skill, but to inability to locate the pathology early enough to insure safe removal or correction. The same may be said of the morbid conditions of the spleen, pancreas, and, in a degree, of the stomach. Until we are better informed by the physiologist of the normal functions of these organs, we can not hope always to differentiate between the normal and the abnormal. The evidence that points to the one and excludes the other can only come to us through concentrated specialized efforts which the average surgeon is technically unfitted to undertake.

The line that divides surgical from non-surgical diseases is still somewhat vague and indistinct, and one of the most common sources of error in the treatment arises from the fact that we are often in doubt as to when and how far we may safely trust to the reparative resources of nature, and under what conditions prompt operative interference should be resorted to. Thus far success in surgery has been measured largely by the ability to cope with advanced disease after it has become an immediate menace to life and health. But the time can not be far distant when the importance of recognizing the antecedent pathology of cancer, ulcer, surgical kidney, pus tubes, prostatitis, and many other grave lesions, will be impressed on the profession, and the public will be educated to choose preventive rather than last-resort surgery. If we are ever to solve the problems that baffle our endeavors to-day, and place surgery on a much higher plane than it now occupies, scientific workers must become more practical, practical workers must become more scientific, and physicians and surgeons must become more nearly united in their ideas of pathology and treatment. And this can only be accomplished by an organized movement, tending to bring all workers in closer touch and sympathy with one another.

Chylous Cysts of the Mesentery.

DR. MILES F. PORTER, Fort Wayne, Ind., said that these cysts are very rare, more so than are serous cysts. The origin of chylous cysts must be regarded as manifold. They may be single or multiple, unilocular or multilocular, and multiple cysts may become multilocular single cysts and later unilocular by pressure absorption. There is nothing distinctive in chylous cysts save their contents and location. An exact diagnosis is neither possible nor necessary. A centrally located movable tumor crossed by bowel will be almost diagnostic of mesenteric cyst. Puncture for diagnostic purposes is condemned. Abdominal pain is a common symptom, and recurrent attacks of pain, accompanied by vomiting and other symptoms of bowel obstruction, are very significant. Chronic increasing constipation is a frequent symptom. A history of trauma is common. The treatment is surgical and the technic

depends on the findings in each case. The fear of permanent chylous fistula in cases treated by drainage is unfounded.

Treatment of General Peritonitis.

DR. DONALD MACRAE, JR., Council Bluffs, Iowa, advocated the Fowler position in all suspected peritoneal infections; also the institution of free drainage at the time of the operation by means of large-sized rubber tubing only. Drainage of the most dependent part of the pelvic peritoneal pocket is imperative. He urges the removal of the primary pathologic factors when possible and advises against the use of gauze and flushing. He said the drainage tubes should be sucked at frequent intervals.

Appendicitis.

DR. I. B. PERKINS, Denver, favors early operation in all cases, including the interval cases. Fatalities are usually chargeable to delay.

(To be continued.)

AMERICAN SOCIETY OF TROPICAL MEDICINE.

Meeting held at Philadelphia, Dec. 8, 1905.

Mosquito Work in Relation to Yellow Fever on the Isthmus of Panama.

COL. WILLIAM C. GORGAS, U. S. A., in charge of the sanitation of the Canal Zone, spoke more particularly with reference to yellow fever and malaria, which two diseases had caused the principal mortality during the building of the railroad and in the attempted construction of the canal by the French. The conditions were much the same as had been encountered in Cuba, except that in Panama mosquitoes breed as readily in January as in July. During the French occupancy the heavy mortality was a potent factor in the failure of the canal work. From his investigations he believes that the French statistics represent not more than half the actual mortality. Under the United States government authority for doing sanitary work was granted in February, 1905. All cases of yellow fever were required to be reported to the American health authorities, and in addition all cases of fever of any kind occurring in an American were also required to be reported. Cases were, therefore, received within the first day or two of the disease. The general mortality was about 25 per cent. of all cases; the mortality of Americans treated in the hospitals was not more than 10 per cent. The suspected patient was placed in a thoroughly screened ward. In the yellow fever wards the additional precaution is taken of putting each new patient in a wire cage just large enough to cover his bed until the infectious period of the disease has been passed. Also these wards are fumigated every two weeks, so that if a mosquito should get in and bite a patient she would not have time to become infected herself, for from twelve to fifteen days' time is necessary for infection and ability of the mosquito to carry it. The house from which the patient is removed and the contiguous houses are likewise fumigated.

The stegomyia was described as a very domestic mosquito which generally does not leave the house where she is born and bred, and scarcely the room in which she has lived. The fumigating squads are composed of an experienced foreman and twenty men. The material generally used is sulphur, although in many stores and in the better class of residences many articles are ruined by its employment. Persian insect powder, pyrethrum, is sometimes substituted for sulphur. If a patient elects to be treated at home, the central office is informed, and the patient is thoroughly protected by screens. Only one exit is left to the room and a guard is stationed there, who keeps the key and admits only those who are authorized by the doctor. The fumigation of the rest of the house is carried out and the screened room fumigated when the case has terminated. The stegomyia breeds principally in clean rain water, and in Panama the people have depended largely on rain water for domestic purposes. All receptacles for the water are, therefore, covered, and an inspector appointed for each district, concerning the conditions of which he is obliged to report at least twice a week. At the time of the first inspection, about the first of March, 4,000 breeding places were reported; in October, about the time Colonel Gorgas left Panama, there were less than 400. In the city of Panama it is estimated that 90 per cent. of the mosquitoes were stegomyia, while in Havana they constituted only 5 per cent. of the mosquitoes. The results of the work are seen in the apparent elimination of yellow fever. In June there were 67 cases; in July about 40; in August about 27; in September about 7; in October 3; none in November; none so far in December. In the town of Colon the last case occurred July 23. Colonel Gorgas believes, however, that it is necessary to allow at least two months to pass without a case before it can be said with certainty that yellow fever has been eliminated.

Detailed descriptions of the measures against malaria were not given, but they were the same as those carried out in Havana, and now used in the United States generally, principally superficial ditching. The results have been satisfactory. Colonel Gorgas thought it safe to say that the canal is being dug with as little trouble from sickness as would obtain in a similar project between Philadelphia and Baltimore, and he believes that further improvement can yet be secured.

SAN BERNARDINO COUNTY MEDICAL SOCIETY.

Annual Session, held Dec. 13, 1905, at Arrowhead Hot Springs, San Bernardino, Cal.

The President, DR. HOELL TYLER, Redlands, in the Chair, and DR. J. M. HURLEY, Secretary.

DR. G. W. TAPE, medical director of the Arrowhead Hot Springs, delivered the address of welcome, which was responded to by Dr. Hoell Tyler.

Officers.

The following officers were elected for the ensuing year: President, Dr. Thomas M. Blythe, Redlands; first vice-prest., Dr. Joseph A. Champion, Colton; second vice-prest., Dr. Charles E. Ide, Redlands; secretary, Dr. D. C. Strong, San Bernardino; treasurer, Dr. John H. Evans, Highlands.

Importance of a Proper Dietary in the Treatment of Disease.

DR. FRANK W. THOMAS, Claremont, took the ground that a careful and intelligent study of dietetics is the keynote of the medicine of the future. Drugs, while both useful and necessary in emergencies, can not produce the permanent alterations of nutrition which can be obtained by an intelligent selection of foods. In nearly all chronic diseases, such as gout, rheumatism, nephritis and diabetes, an intelligent regulation of the diet and habits of the patient is far the most potent means of arresting the progress of the disease. He referred to the brilliant researches of Pawloff on the different strengths of digestive juices called out by different classes of food, illustrating the exquisite adjustment of the alimentary canal to its work, and also the changes which can be produced by an intelligent selection of the different classes of foodstuffs.

DISCUSSION.

DR. WOODS HUTCHINSON, Redlands, believes that a new era is opening up in this most important realm, and that some of the old landmarks are going down to oblivion. Among them is the old three-fold classification of foods of Liebig and Voit, into the flesh-formers or proteids, the fat-formers and the heat producers. It is important to recognize that any class of food can serve any of these functions, and that all food taken into the body is broken down into its simplest molecules, and built up again into the tissues, giving out energy in the process. Secondly, it is doubtful whether the food elements which can be built up into the body tissue pass through the form of peptone. Certainly, a considerable percentage of the peptone formed in the alimentary canal is on its way to the formation of creatin and creatinins and finally other waste products. Therefore, the administration of predigested foods, peptones and peptonoids, is of exceedingly doubtful value, nor is the giving of pepsin itself of much greater utility, inasmuch as all gastric analyses show abundance of this ferment present in all cases where acidity is anywhere near normal. The researches of Pawloff have shown that an attractive taste on the part of food is absolutely necessary to stimulate the flow of gastric juice.

DR. GEORGE K. ABBOTT commented on the delicacy and accuracy of the modern tests of digestive power, and the importance of finding out whether lactase is present in the gastric juice before putting the patient on a milk diet.

DR. GEORGE L. COLE, Los Angeles, said that while he thoroughly agreed with Dr. Thomas as to the great importance of dietetics, he had no sympathy with the therapeutic nihilism which decries all use of drugs. The man who has no confidence in drugs should resign from the profession. He agreed with Dr. Hutchinson that the patient should be encouraged to take a wide variety of foods, and that Nature knows how to take care of an excess better than she does of a deficiency. He believes that pepsin and other digestives are sometimes useful in assisting patients who either can not, or imagine they can not, digest certain foods. He believes with Dr. Hutchinson that most patients are underfed rather than overfed.

DR. F. C. E. MATTISON, Pasadena, stated that the more he studies the diet of his patients the less frequently he finds it necessary to give medicine in the chronic disturbances of nutrition. He believes in going into considerable detail with his patients as to what and how much they are eating, making them give him, as nearly as possible, a complete list of the articles they have eaten during the last six or eight meals. He frequently finds in this the secret of at least part of their condition. He agreed that more patients are underfed than overfed, especially among women and children, and that many who attempt to regulate their diet have done so at the expense of some of the elements of which they were most in need, particularly in the line of meats and fats.

DR. NORMAN BRIDGE, Los Angeles, sounded a note of warning against the too strictly regulated diet. In diabetes the tissues are in a state of carbohydrate hunger, and the temporary deprivation of carbohydrate might re-educate them to the combustion of sugars. An absolute starch-free diet is practically impossible to obtain, and when approximately reached would ultimately injure the general nutrition if long persisted in. He agreed that a wide range of foodstuffs is absolutely necessary to health, and that patients should be encouraged to increase their food-range rather than to diminish it; that the majority of patients are underfed rather than overfed; that the senses of taste and smell are necessary to aid digestion and produce a flow of Pawloff's appetite juice, and that attractive cooking is of great importance in dietetics. Our ideas of digestibility of a food are too exclusively based on the length of time it takes the food to leave the stomach, forgetting that the real digestion is in the small intestine, and that so long as the stomach can empty itself in a reasonable length of time and pass it on to the small intestine, a patient's nutrition can be well kept up for an indefinite period.

DR. JOHN HAYNES, Los Angeles said that in his experience a large majority of patients, particularly of successful business men over the age of 40, eat too much and suffered severely in consequence. He believes that the mere thought of savory food is sufficient, sometimes, to start a flow of gastric juice.

DR. LEMOYNE WILLS, Los Angeles, believes that we should encourage our patients to depend less on the artificial flavors of the cook and to relish their food in its natural state. That the use of milk, raw eggs, nuts and fresh vegetables form a valuable stimulus to the jaded appetite, and call into play both the muscles of mastication and the digestive secretions of the stomach and pancreas in a way that stewed, baked and boiled food does not. He believes that animals living in the open air and eating food in its natural state, are more vigorous and less subject to disease than man.

DR. C. C. BROWNING thinks that a full and rich diet range is necessary in a great majority of cases, both to sustain nutrition and to provide a sufficient amount of waste material to properly stimulate the colon. This is well understood by farmers and stock men who know that horses and cattle fed on grain alone rapidly lose their appetite and become diseased. He called attention to the fact that it is necessary to not only ingest an abundance of food, but to create an appetite for it, and one of the best ways in which this can be done is living in the open air, with exercise, if possible, but where fever exists, as in the case of the consumptive, without it. One of the great advantages of the open-air treatment of consumptives lies in the appetite it gives and the large amount of food the patient can consume without becoming bilious. Get patients out of the delusion that drafts are harmful. Teach them to sleep every night with a current of fresh air blowing across the face and half their dyspepsia will disappear.

Shall We Open the Abdomen in the Presence of Acute Inflammation of the Peritoneum?

DR. C. VAN ZWALENBURG, Riverside, held that an intelligent conservatism in this class of cases is productive of best results. He stated that during his practice he has treated 35 cases of appendicitis without operation, all of which recovered. He has also found that many cases of peritonitis, due to various causes, including tuberculosis, recovered by a policy of letting alone. He finds great satisfaction in the Ochsner method of treating appendicitis.

The Conservative Surgery of the Tubes and Ovaries.

DR. A. W. LOBINGIER referred to stricture of the isthmus of the tubes, and methods of operating for this condition. His experience with grafting of the ovary has not been a favorable one. He deprecates radical and unnecessary interference with organs or inflammatory adhesions, and particularly emphasized the importance of limiting the handling and exposure of the viscera to the smallest extent possible, and the avoidance of poisonous or irritating antiseptics and flushes in the peritoneal cavity. He described several original procedures for reducing interference and exposure to a minimum, at the same time providing for the free escape of pus and serum.

DISCUSSION.

DR. C. D. LOCKWOOD, Los Angeles, called attention to the necessity of perfect drainage in abdominal surgery. He agreed with Dr. Lobingier that the pendulum of surgery is swinging back again in the direction of conservatism, and the reduction of removal and interference to only what is absolutely necessary.

DR. LAMOYNE WILLS referred to the admirable original work done by the late Dr. J. McCone of Los Angeles in experimental transplantation of the ovary, stating that his success in this operation had been really remarkable anticipating the results of European experimenters.

DR. BEARDSLEY agreed with Dr. Van Zwalenburg that there has been entirely too much rash and unnecessary surgery of the abdomen. He has had most satisfactory experience in a number of cases of appendicitis with the Ochsner or starvation method of treatment. He also spoke highly of Murphy's system of drainage of the peritoneum, making an opening only sufficiently large to admit the drainage tube and closing up the wound close around the tube.

DR. D. C. STRONG, San Bernardino, thinks that while the Ochsner treatment is excellent in its place, it is being used in an unintelligent manner to a dangerous degree as a substitute for operation in appendicitis. This is not Ochsner's intention or method, as it is only used in cases seen forty-eight hours or more after commencement of the attack, or such as are from various causes unsuitable for immediate operation.

DR. W. W. BECKETT, Los Angeles, believes that in early cases the ideal procedure is to open at once, reserving the Ochsner method for cases too late for operation.

In the evening the society members were guests of the Arrowhead at a fine banquet, which was followed by toasts.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Regular Meeting, held Nov. 2, 1905.

The President, DR. R. C. NORRIS, in the Chair.

Control of Postpartum Hemorrhage.

DR. J. S. RAUDENBUSH said that the treatment must be directly or indirectly hemostatic, and the measures employed depend on the cause, existing conditions and the fact that the hemorrhage may be brought on, accompanied, or followed by shock, syncope or anemia. To check the hemorrhage and overcome its effects one must (a) induce uterine contractions, (b) stimulate the various organs of the body to their respective functions, and (c) supply fluid to the heart and brain. Ergot

should be given when the uterus is empty as a preventative of hemorrhage, and to prevent the free accumulation of blood clots. Aseptic ergot given hypodermically will show its effect almost immediately, and its use is imperative in serious cases. Strychnin is of value in cases due to extravasation and inertia uteri. It should be given in doses of gr. 1/40 to 1/20, and repeated as indicated. It may be combined with ergot or digitalis, or with morphin where cerebral anemia exists. It is wrong to over-stimulate because the uterine muscles will become exhausted. Digitalis is given hypodermically in doses of m. x-xxx, or digitalin, gr. 1/100 to 1/50. It is well to combine it with strychnin since its effect will continue for a longer time. It lessens the heart beats, contracts blood vessels, and it acts on the uterine muscles. Adrenalin is useful when the hemorrhage is not too severe, or to prevent secondary postpartum hemorrhage. It is the best drug for shock. Calcium chlorid and gelatin produce coagulation of the blood. The commercial gelatin, which contains 0.6 per cent. of calcium chlorid, frequently contains albumoses which prevent hemostatic action. He has never employed it in this condition. As stimulants he favors strychnin and digitalis. Nitroglycerin should not be used, unless for syncope and shock. Caffein citrate is excellent as a cardiac and cerebral stimulant in syncope. Strophanthus, quinin and camphor are not indicated. Alcohol (whisky or brandy) can be of no service in severe cases, but may be of real harm. Ether, hypodermically, is useful to stimulate a flagging heart. Ammonium carbonate may be given per rectum when shock is present. Turpentine is of value when purpura hemorrhagica and hemophilia are the causes. Atropin is invaluable for shock and can be combined with morphin. Normal salt solution, administered by enteroclysis, hypodermoclysis or venaclysis, acts as a mechanical stimulant and should be used whenever collapse, shock or anemia follow the hemorrhage.

The best prophylactic and therapeutic measure for postpartum hemorrhage is massage and compression of the uterus. It is effectual, an external method, free from the dangers of infection, and the manipulating hand is able to detect the exact state of the uterus. The hand is kept on the uterus for a half-hour or hour after delivery. In this way no concealed postpartum hemorrhage can occur. First apply uterine massage, then give hypodermics. If not effectual, then give also hot intrauterine injections. Compression of the abdominal aorta is also free from the dangers of infection, prevents flow of blood to uterus, sending it to the heart and brain. Elevation of feet, lowering the head, and ice to the abdomen are of great value to check, control or prevent hemorrhage. Fritsch's "rational bandage." The empty uterus is flexed over the pubic bone, and pads are placed in the abdominal depression back of the uterus and fixed by bandages. The uterine cavity obliterated, immediate hemostasis, no internal manipulations, nothing need be done for twelve or twenty-four hours. Bandaging the arms and legs to send the blood to the heart and brain may be injurious; venaclysis is far better. Abdominal binder, as a preventive, should be applied in all cases of labor, also after hemorrhage when it has been checked. Flagellation of the abdomen is dangerous in cases of shock. Heat to the body and extremities may be tried when shock is present. Electricity should not be used because it increases liability of infection. Inhalations of fresh air, oxygen, camphor and ammonia may be of value whenever "air hunger," syncope or shock are complications.

Within the uterus, hot water irrigations may be given when uterine massage and hypodermics fail. Temperature of water 115 to 120 F.; must be hot to be styptic. Intrauterine manipulations are unavoidable when the placenta is adherent, and are sometimes necessary for removal of clots and to irritate the uterus to contract. It is well to have simultaneously hot-water irrigations. Vinegar is very effective. When more aseptic measures are wanted it may be injected or carried in on a saturated cloth and squeezed over the inner uterine surface. Ice within uterus may be of value when hot water fails. Astringent acids are condemned. Iodin has been used, but cleaner and more effectual measures are available. Iron in the form of Monsell's solution is unclean, injures lining of uterus, the formed clots are liable to become dislodged and favor secondary hemorrhage. It is almost certain to lead to infection and should not be employed. Tampons are very difficult to effectually pack in a flabby uterus, in fact, quite impossible; much time is required; sepsis is common, and secondary hemorrhage is apt to occur when packing is removed. They favor concealed hemorrhage. Operation is seldom necessary. During second stage of labor, version, forceps, Cesarean section or, perhaps, craniotomy may be necessary. After delivery, correction of displacements, repairs, clamping of vessels, laparotomy, curettage may have to be done.

DISCUSSION.

DR. JOHN B. SHOBER has used extract of mammary gland extensively in cases of hemorrhage due to subinvolution of the uterus following labor, miscarriages, etc. It has entirely taken the place of ergot in that class of cases in his practice. It has a direct influence on the uterine muscle, is a stimulant to the circulation, and has no untoward systemic effect, even when used in large doses.

DR. DANIEL LONGAKER believes that the routine use of ergot after the emptying of the uterus will go a long way toward preventing hemorrhage. Ergot should be used after the uterus is completely emptied. He has never seen the symptom of "air hunger" except as a precursor of a fatal termination in several cases of rupture of the uterus. Little can be done when this symptom develops. He thinks that there are cases, especially those which occur occasionally in placenta prævia, with marked tendeney to continuation of bleeding, in which the gauze pack, sterile or iodoform, is of great value. Nor would he limit the use of the gauze in this class, for in postpartum hemorrhage, where the placenta has been above the zone of danger, the gauze pack may be safely used. Of the routine measures, the compression of the uterus, the employment of hot water of the temperature of 115, the use of gauze and ergot, using a sterile preparation hypodermically, are the remedial agents on which he relies.

DR. RICHARD C. NORRIS thinks there are many men who fail to understand the application of Credé's method of placental expression and, therefore, fail to apply it in the proper way. He believes that the important fault in employing this method for the delivery of the placenta, in the conduct of the third stage of labor, is that the majority of men attempt the expulsion of the placenta too soon, before the clots in the uterine sinus have had opportunity to form and become reasonably firm. In the absence of bleeding it is his custom to wait ten or fifteen minutes before an attempt is made to expel the placenta by the Credé method. He has never been able to convince himself that ergot did any harm. He invariably administers a dose of ergot as soon as the baby is born, even before an attempt is made to extract or deliver the afterbirth. The theoretical objection to ergot, that it is apt to cause the so-called hourglass contraction of the uterus, he thinks, is a fallacy. The muscles of the lower segment of the uterus are over-stretched, and perhaps paralyzed for several hours, and the action of the ergot for that time is on the upper segment. The administration of ergot from a prophylactic standpoint is a good plan, and the administration earlier than the completion of the third stage has in his hands not been a disadvantage. Furthermore, it helps to promote firm uterine contraction during the first two or three days and perhaps, in a measure, prevents absorption of toxic products that might find entrance to the circulation through the lymphatic or blood vessels.

As to the manual manipulation, he saved a patient's life once by being familiar with Fritsch's method, and in conjunction with it, compressing the abdominal aorta with the ulnar side of the hand, utilizing the other hand in the vagina by holding the posterior against the anterior lip of the cervix and crowding it also against the symphysis pubis. When in need of appliances for an emergency, such as a hot douche, a gauze tampon, a hypodermic, etc., instead of trying to help to get these things, the cool, deliberate obstetrician will direct the frightened assistants while he temporarily controls the hemorrhage by holding the uterus in his grasp. This will stop the bleeding for the time being and give one not only a chance to

regain his own equilibrium, but the assistants to get any appliances that may be required. The method is of extreme value in the emergency or serious postpartum hemorrhage. He has saved life by the intrauterine tamponade. Where the hot douche fails, external and internal manipulation fail, and the woman is rapidly dying, the one thing to do is to promptly tampon the interior of the uterus from fundus to vagina. He does not use iodoform gauze if he can help it. After twenty-four hours the gauze is gradually taken out.

He thinks that adrenalin solution has not been demonstrated to be more valuable than ergot. He has frequently employed it in shock in conjunction with salt solution by hypodermoclysis and has found it of value. In conditions of shock independent of postpartum hemorrhage, he would also not hesitate to use it. A tampon saturated with adrenalin solution and packed in the uterine cavity would probably have some effect in promoting firm contraction and the formation of thrombi. He is not satisfied, however, that its action on the musculature of the uterus can equal that of ergot. Every obstetrician in the daily routine of his practice should have ready for use iodoform or some other gauze for tamponing the uterus. He also urged the men who see these few cases of real postpartum hemorrhage to bear in mind the importance of Fritsch's method.

DR. WILLIAM R. NICHOLSON agreed with Dr. Norris relative to the rarity of true cases of postpartum hemorrhage. The obstetrician's duty is to place his hand on the abdomen over the uterus as soon as the child has been born and to keep it there until the placenta is delivered. If this is carried out as a prophylactic measure there will be many less cases of moderate bleeding following deliveries. The treatment with the mammary gland may be of value in such cases as Dr. Norris made mention of, which oozed to death. In the treatment of hemorrhage the two methods of most value are the method of Fritsch and tamponing the uterus with gauze. He recalled one case of postpartum hemorrhage in which appendectomy had been performed about a year before, and in this case there was no other appreciable cause than the adhesions that had formed. He believes that as the removal of the appendix during pregnancy is becoming more and more frequent, it is well for a man attending a case with such an operative history to be especially on his guard against postpartum hemorrhage. In the case referred to the adhesions probably were the cause of the bleeding.

Embolism Following Abdominal Section.

DR. WILMER KRUSEN reported five cases, four of which ended fatally, occurring in twelve years of gynecologic practice. The symptoms in all these cases, as nearly as could be observed, were very similar. The attack was characterized by precordial distress, severe pain and dyspnea associated with quickened pulse. The patient has an extremely anxious expression, gasps for breath with the aid of all the auxiliary respiratory muscles; the face becomes cyanosed; cold, clammy sweat occurs; the mind remains clear, as a rule, and death occurs in a few minutes in spite of energetic stimulation. The fifth case reported manifested all these symptoms and yet recovered.

When these accidents occur the surgeon feels powerless because there is practically no treatment for the severe cases. It is probably possible, by a careful study of the blood before operation and the avoidance of excessive loss of blood during the procedure and the use of saline infusions after the procedure, to diminish the number of these cases. In anemic cases a longer rest in the absolutely recumbent position, with the avoidance of all exertion or straining for a longer period than is customary, is also to be advised.

DISCUSSION.

DR. WILLIAM R. NICHOLSON has noticed that many of these cases of embolism occur in the simplest form of cases and that the retractors pressing on the internal abdominal vessels give rise to the condition. This was the conclusion reached in our investigations.

DR. COLLIN FOULKROD said that in cases of great anemia and cases which, after operation, show great shock, there is a pronounced tendency to thrombosis or emboli. The puerperal embolism is quite common and usually occurs from some exertion of the patient, either rising in bed, vomiting, turning over immediately after labor or in the puerperal stage. In one case of hysterectomy which he watched die from pulmonary embolism and heart clot, in which there was no evidence of the slipping of a ligature or of anything being done wrong in the operation, there was a clot not bigger than a filbert in the broad ligament. The postmortem showed undoubted heart clot. In the three cases he has seen of death from embolism, respiration stopped first; the heart beat from one to three minutes after the breathing had stopped, as if there were something plugging up the pulmonary artery and the heart was pumping tumultuously in order to drive that out. The lungs do not expand, because no blood enters them. There is one point which occurred to him in connection with the subject of emboli: the impossibility to tell the exact cause of death in these sudden terminations. One case was that of a man operated on for ulcer of the first part of the duodenum and two days after operation he developed rapid heart and rapid respirations and died within a short time. There was a clot in the heart which, while not exactly the type that you would find postmortem, was one of adherent white fibrin, seemingly antemortem. He apparently had not been able to stand the shock accompanied with the extreme anemia and the coagulability of the blood. He believes that many patients who die suddenly where surgeons do not attribute the death to any form of pulmonary embolism, and in which they have been led astray by the associated symptoms, die from the presence of the heart clot and subsequent embolism.

DR. RAUDENBUSH cited a case following an abdominal operation. The patient seemed to be fairly well for the remainder of the day and the following day, when between thirty and thirty-six hours after the operation she asked for water. She seemed bright and remarked that she was able to help herself. After taking a little of the water the nurse left the room for a few minutes only, when she heard the patient give a gasping and alarming cry, but before the resident physician could be gotten there the woman had died.

DR. R. C. NORRIS said that every case of sudden death should have a very careful autopsy made before a final diagnosis is made. He believes that some of these sudden deaths after operation are sometimes due to myocardial conditions associated with anemia, prolonged anesthesia and a heart that has been doing its best during convalescence suddenly gives out. Careful observations should be made of the clinical histories of these cases, and, while it is not always possible to get an autopsy, we should have some mental reservation as to diagnosis without autopsy findings.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, held Dec. 6, 1905.

The President, DR. CHARLES S. BACON, in the Chair.

Radical Removal of Cancer of the Stomach.

DR. WILLIAM J. MAYO, Rochester, Minn., said the medical treatment of carcinoma of the stomach availed little, and cited numerous examples to show the inconsistency of looking for a medical side of this question. The reasons why the medical profession has been so slow to apply surgical methods to the cure of this common malady are: 1. The frightful mortality of early operations which discouraged patient, physician and surgeon. 2. The difficulties and uncertainties of establishing an early diagnosis. In selected cases the Kocher operation is the method of choice. The death rate from early operations is appalling; the average mortality at the time of Billroth's death was over 60 per cent. Steady progress has been made since 1900. Improvements in technic have been so great that the mortality has been reduced to a remarkable degree. The workers in this field have been comparatively few; yet the work has been so quietly carried on that the profession does not seem to realize the enormous strides that have been made. The mortality in operable cases, in the hands of men of experi-

ence, is not above 10 per cent., and in suitable cases it is nearer 5 per cent.

An exploratory incision is the only way an early diagnosis of cancer of the stomach can be established. Prolonged attempts to establish a diagnosis by laboratory methods are provocative of delay and should be discouraged. The most careful, painstaking methods of examination, including laboratory means, should be insisted on, but should not be unduly prolonged. Where there is suspicion of cancer of the stomach, which can not be disproved by the known methods of examination within a reasonable space of time, the conservative practitioner should explain that suspicion to the patient and ask for a surgical consultation. The clinical history, together with chemical examination of the stomach contents, may lead to the suspicion of cancer of the stomach, and it is on this physicians should act, if they would be truly conservative.

DISCUSSION.

DR. A. J. OCHSNER said that the high mortality following operation for carcinoma of the stomach in the early days was due to conditions which no longer obtain, since the methods of operating have been improved by Mayo, Mikulicz, Krönlein, Czerny and Robson. The mortality primarily comes from the fact that many patients can not stand any operation well, and there is a mortality which comes from operation on patients who have a slight power of resistance. Considerable mortality comes from secondary complications, as pneumonia, etc. This is due to unnecessary traumatism and consequent infection along the esophagus. This has been disposed of by simplifying the operation. The surgery of the stomach, as applied to the treatment of ulcer, has cleared up cases which otherwise would have become cancerous, and has placed the surgeon in a position where he can reasonably approach these cases at a time when their successful treatment is a comparatively simple matter. Shock is one of the causes of high mortality, but this has been reduced materially by a more simplified operation. Infection, which was dreaded so much years ago, has been practically eliminated.

DR. ARTHUR DEAN BEVAN said that the more modern work of the last five years has been sufficiently encouraging to urge surgeons to operate more frequently than they have done heretofore on these cases. He thinks the internists have not sufficient confidence in present means of early diagnosis to warrant them in turning patients over to surgeons for an exploratory operation on the ground that they have probably carcinoma. He admits that this is rather a fine line to draw, but it is one that must be drawn by scientific medical men. The cases which hold out the greatest hope are usually the exploratory ones.

DR. E. WYLLYS ANDREWS stated that the justification for the radical in preference to the palliative operation is based on the results obtained and the greatly decreased mortality from the more modern methods. He does not believe, however, that the time will ever come when palliative operations will be abandoned, for he has seen patients whose lives have been prolonged four and six months, and even for one and two years, by such operations.

DR. ALEXANDER HUGH FERGUSON stated that what the essayist said in regard to early operation in cases of cancer of the stomach should be taken to heart by every practitioner of medicine. He looked up 21 cases that he has had in the last three years, in which he simply opened the abdomen and could do nothing for the benefit of these patients, on account of extension of the disease. Those are the cases that come to surgeons for a positive diagnosis. He is frank to admit that in every case, with the exception of one, in which he opened the abdomen, there was a positive diagnosis of carcinoma of the stomach. To accomplish any good, these patients should be operated on earlier. He does not know how to make a diagnosis of carcinoma of the stomach so early that a patient is safe. He has been fortunate enough to operate on one case that has been apparently cured by a pylorectomy, that is, the total removal of the pylorus and the cancer-bearing area. It was an early case, because there was early pyloric obstruction. It would be a fortunate thing for the sufferers from carcinoma of the stomach if obstruction at the pylorus were the first symptom of the disease; then the vast majority of patients would be saved from an untimely death. This pylorectomy was done in Canada twelve years ago, and the man is alive and well to-day.

DR. FENTON B. TURCK thinks the keynote of the paper is the importance of directing attention to the one question of determining whether or not a given case is one of carcinoma. Taking a certain group of conditions or symptoms, as mentioned by the essayist, one is justified in assuming at least the possibility of the existence of carcinoma, and if a patient does not recover promptly under appropriate medical treatment adjusted to the case in hand, he would not hesitate to demand an exploratory incision. He recalled two or three cases of a doubtful character in the last year where, by prompt and timely operations, the lives of those patients have been prolonged.

DR. FRANK BILLINGS said that there is no medical treatment except that of trying to relieve the pain of a patient who has cancer of the stomach. Cancer of the stomach, if it is not palliated by drugs, is a surgical disease. As to diagnosis, there is nothing exact in either our present clinical or laboratory methods. A few years ago physicians looked on the chemical conditions of the stomach contents as important in diagnosis, when, in fact, the chemical reactions of the stomach contents are of minor importance. The motility of the stomach is one important factor in separating medical and surgical cases. When this is disturbed and stagnation occurs, the case is either a medical or surgical one, and the diagnosis will clear up which it is. If it should turn out to be a case of pyloric stenosis, it is surgical; if it turns out to be a case of diminished motility of the stomach, with a large pyloric orifice, it is usually medical, although it may be at any time surgical. Here the diagnostic methods of the laboratory help very materially in clearing that up. A mistake has been made in the past in depending on chemical methods and in keeping patients for a long time under observation, when finally the chemical results were practically of no value.

As to palliative surgical treatment, he has had some experience with patients suffering from cancer of the stomach. He has had many patients on whom gastroenterostomy has been performed. He has seen those patients live for more than a year after that operation; they have been relieved of stagnation; they have been made comfortable; they have gained greatly in weight, in general nutrition, and were happy for the time being. Right here he thinks the medical man has something to say, for the surgeon, after he has performed gastroenterostomy, does not take care of the patient. Medical men have to ease those patients down to the grave. The essayist, he said, has thrown much light on palliative operations, particularly pylorectomy, with removal of as many secondarily infected glands as possible. With this form of operation, as done by the essayist, drainage is established and continues until the death of the patient. Life is thereby longer prolonged than it is by a gastroenterostomy. He is willing to advise his patients to have an exploratory laparotomy made in doubtful cases; and yet one of the greatest surgeons of this city has said to him more than once that a laparetomy for diagnostic purposes should never be performed. In view of the fact that the technic of the operation for cancer of the stomach has been improved so much, so that the mortality, according to Dr. Mayo's figures, is now less than 10 per cent., physicians can turn over their patients to surgeons without the danger of having them killed on the table. A great deal, however, depends on who does the operation.

DR. CARL BECK stated that we have heretofore relied on European authorities, refraining from radical procedures for the removal of cancer of the stomach, and that we have sacrificed too many patients by doing palliative rather than radical operations. This is the first time we have had a report of a large number of cases from an American surgeon, based on true surgical and pathologic knowledge, with authoritative statistics, which can not be questioned, where gastrectomy has been shown to be preferable to any palliative procedure. He has had the opportunity of observing a patient in whom he did a radical operation on the stomach for carcinoma about

five years ago. He has had to do a secondary operation for carcinoma on the same patient in a different region, and during this second operation he examined carefully the stomach region and found it normal. The patient is now well.

DR. MAYO said he feels confident that the near future will reveal methods of making diagnoses in these cases more easily than can be done now, and that as a consequence a considerable percentage of patients will be sent to surgeons much earlier for operation. The favorable cases of cancer of the stomach he has had to operate on, to a large extent were operated on at the time of ulcer, but in which true cancer was found. It was these early cases that led him to take more and more interest in the surgical side of the subject. Dr. Mayo disclaims any superior knowledge or skill in connection with the operation. He has seen the operation performed in many places in this country and abroad, and he does not believe there is anything in the statements that have been made from time to time crediting him with originality in this regard. He has not claimed any part of the operation as it is developed today. True, he has picked up little points here and there in the way of technic and put them together.

Lastly, he said we can not always make a pathologic diagnosis, and he thinks any man who says that we should not operate without a pathologic diagnosis is in error. He does not see how it can be otherwise, because a patient may have the appearance of cancer, when on making a purely exploratory operation there may be found an ulcerated mass or a well-formed tumor. This patient may present cachexia, loss of hydrochloric acid, etc., in which the surgeon may be confident before operation that he is dealing with carcinoma. Fifteen such cases he eliminated from his statistics, because pathologically, as shown by the microscope, they proved to be ulcer rather than carcinoma. Surgeons must occasionally do operations on cases in which the pathology is not clear before they operate; it is not even clear at the operating table, yet there is a condition present which can be relieved surgically.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Infantile Eczema.

In an abstract in the *Amer. Jour. of the Med. Sciences*, G. Clenet regards infantile eczema as a form of autointoxication, with the origin in the gastrointestinal tract. The first indication, therefore, according to this author, is to attempt to regulate the condition of the stomach and intestines by regular feeding, if the child is breast-fed, and by properly modified milk, if the child is bottle-fed. In cases of older children the diet should consist chiefly of milk, with a limited amount of eggs and vegetables. If any meat is given at all, it should be white meat preferably. Coffee, tea and alcohol should be entirely discarded. When there are arthritic tendencies, alkalies should be administered in these cases, and when there is a scrofulous condition cod-liver oil, iron or calcium glycerophosphate is recommended, and in children over 5 years of age, in whom the eczema is of a sluggish nature, arsenic may be administered. In those cases in which the dietetic and internal treatment do not suffice, local applications become necessary. The skin must be prepared aseptically by means of a mild non-irritating antiseptic, or by simply washing the affected parts with sterilized water. If crusts are present, Clenet recommends that they be loosened by the application of a poultice of potato starch, followed by an antiseptic powder. In cases of eczema of the scalp, sterile oil containing a small amount of salicylic acid is advisable. General bathing is contraindicated. As ointments he recommends those containing salicylic acid, sulphur, tar, or oil of cade. In some cases the dressings of silver nitrate are of service, followed by the use of tar or salicylic ointment. In the most stubborn cases weak pastes of pyrogallic acid may be employed.

Treatment of Tapeworm.

Dr. S. L. Spier, in the *Yale Med. Jour.*, recommends in the treatment of tapeworm the use of pomegranate as preferable to male fern. He recommends that a decoction of the pomegranate bark freshly prepared be employed. Sixty grams of the finely powdered bark are placed in about 500 c.c. of water and allowed to simmer down to about 300 c.c. The patient may be placed on his usual diet on the day preceding the employment of the teniafuge, with the exception of the evening meal, which should be omitted or consist only of bread and milk. On the same evening he recommends the administration of a mild cathartic, such as compound licorice powder or the compound cathartic pill, on retiring. As soon as there is a free movement of the bowels the next morning, about one-half of the decoction (150 c.c.) should be given the patient, followed in fifteen minutes by a cup of hot black coffee, keeping the patient in bed, flat on his back. It is noted that the decoction easily produces nausea and, therefore, he recommends the sucking of lemons or the application of cold cloths about the neck to prevent this occurring. In about half an hour the remaining portion of the decoction of pomegranate may be given, followed in an hour or so by a large dose of Epsom salts or magnesium citrate. When the parasite starts to make its exit it may be found necessary to introduce a pint of warm saline solution into the bowel in order to assist in its expulsion. In unsuccessful attempts with this method after the lapse of six or eight weeks, when the parasite will have developed sufficiently, he recommends the administration of 150 c.c. of the pomegranate decoction, to which is added one or two drops of croton oil, when the most tenacious tapeworm will usually be dislodged. [In the administration of croton oil one must be certain of the patient's physical condition, especially as to the condition of the arteries and the heart, on account of the violent purging which this preparation is liable to produce in some cases.]

Liquor Ammonii Acetatis.

As a reliable diaphoretic and diuretic, Beasley recommends liquor ammonii acetatis in the following combinations:

As a diaphoretic in a simple cold:

℞.	Liq. ammonii acetatis	℥ii	8 |
	Tinct. aconiti	m. ii	|12
	Vini ipecacuanhæ	m. v	|30
	Aq. chloroformi q. s. ad	℥i	30|

M. Sig.: To be taken at one dose. Or:

℞.	Liq. ammonii acetatis	℥iii	12|
	Syr. tolutani	℥ss	2|
	Aq. camphoræ q. s. ad	℥i	30|

M. Sig.: At one dose, diluted in water, and taken at bedtime.

In cases of acute rheumatism the following combination is recommended:

℞.	Liq. ammon. acetatis	℥iii	12|
	Vini antimonii		|
	Tinct. opii, āā	m. xv	1|
	Aq. camphoræ q. s. ad	℥i	30|

M. Sig.: At one draught, to be taken at bedtime.

[The amount of opium must be regulated to suit the individual case.]

In cases of bronchitis the following combination is advised:

℞.	Liq. ammon. acetatis	℥iss	6|
	Spts. etheris nitrosi		|
	Vini antimonialis, āā	m. xv	1|
	Syr. tolutani	℥ss	2|
	Mist. amygdalæ	℥ii	8|
	Aquæ camphoræ q. s. ad	℥i	30|

M. Ft. mistura. Sig.: One such dose to be taken every four hours.

In cases of acute nephritis the following is useful:

℞.	Liq. ammon. acetatis	℥ii	8|
	Ammon. benzoatis	gr. x	|65
	Tinct. hyoscyami	℥ss	2|
	Decoct. scoparii q. s. ad	℥i	30|

M. Sig.: One-half the amount taken in a little water and repeated in four hours.

The Administration of Mercury in Syphilis.

In outlining the treatment for syphilis, Otto Lerch, in *Amer. Med.*, recommends that the ulcer be extirpated to modify the general infection, and perhaps in some cases to prevent it entirely. After the appearance of constitutional symptoms, such as enlargements of the glands, skin eruptions, and so forth, he recommends that the mercurial treatment be commenced. It may be given by inunction in doses ranging from grains xlv to 3ii (3.00 to 8.00), of the blue ointment in each twenty-four hours. The patient should be instructed, according to this author, to divide the amount into two equal parts, using one part for each leg over the inside, and applying it with vigorous massage. He emphasizes the importance of rubbing for fifteen minutes over each side to cause the absorption, controlling the time by the watch, as the process is very tedious and the patient is too often liable to shorten the time. The following day the process should be repeated over the inside of the thighs in a similar manner, and the third day the inside of the arms; the fourth day the chest and abdomen; the fifth day the back may be similarly treated, and on the sixth day a full warm bath should be administered for cleansing purposes.

It is recommended that the patients use this inunction just before retiring, especially in the winter time, to prevent colds. Thirty inunctions generally constitute a full treatment.

In some cases he recommends that the unguentum belladonnæ be added to the mercurial ointment to make it more pliable, and for its action on the salivary glands. The signs that the treatment is bearing good results are that the patient feels better and gains in weight. If a mercurial eczema should occur, as may be the case in some instances, the inunctions may have to be discontinued for a few days, and the eruption treated with the paste of zinc oxid. The treatment may have to be repeated for at least two years, giving one treatment every six months. Iodin in some form is a necessary adjunct to effective cure. The mercurial treatment may be alternated with the iodid medication, separated by short intervals.

Anal Fissure.

T. Chittenden Hill, in an article in the *Boston Med. and Surg. Jour.*, recommends as a palliative treatment in uncomplicated cases of anal fissure, in which the ulcer is shallow and the sphincters have not become hypertrophied and spasmodic, that a palliative course of treatment be tried and is usually effective. Careful attention must be given to diet and to regulation of the bowels. An ounce of olive oil must be given by the bowel at night, and the patient instructed to retain it until morning. This will produce both a local beneficial effect and will secure a soft movement of the bowels. Next in importance in the treatment is the necessity of observing strict cleanliness by local bathing night and morning with hot water. The parts should afterward be dried with a piece of sterilized gauze and a pad of the same material applied, and kept in position by means of a T bandage. Nitrate of silver in various strengths, even to the use of a pure stick, may be of value in these cases, as it acts by destroying the unhealthy granulations and the exposed nerve endings, as well as affording a protective covering by means of the formation of an albuminate of silver. The author recommends, however, the application of pure ichthyol to the fissure by means of a cotton swab two or three times a week, as of much greater value than nitrate of silver. (Cohnheim, of Berlin, states that he uses ichthyol locally, together with the olive oil treatment in all such cases, with great benefit.) This preparation locally allays the pain and it does not require but few applications to produce the desired effect. Whether using the nitrate of silver or ichthyol, it is probably best first to anesthetize the fissure by means of a local application of a strong solution of cocain (10 per cent.). When these patients are discharged they should be instructed that if their constipation is not attended to and the parts are not kept clean, their trouble is very liable to recur. In those cases in which palliative treatment does not produce the proper response, or in which there is much hypertrophy and spasm of the external sphincter, the operative treatment is indicated. The operative procedures, as recommended by this writer, are stretching of the sphincters under general anesthesia, or a complete or partial division of the external sphincter under local anesthesia.

Medicolegal

Unregistered Practitioners Must Get Certificates.

The Supreme Court of Michigan says that in the case of Hooper vs. Batdorff attention was called to the fact that the act of 1899 required all persons engaged in or who wished to begin the practice of medicine and surgery to make application for a certificate, while the amendatory act of 1903 omits the former class, thus apparently limiting the laws to cases of beginners in practice. But the court thinks this inconsistent with the legislation on the subject, which began as early as 1883. It says that, considering the several acts, it is reasonable to believe that in 1903 the legislature took it for granted that practitioners then engaged in business had complied with the law of 1899, and that it was not the design to compel them to make application again. The court can not believe that it deliberately intended to offer a premium to law breakers, which is the effect of the first stated contention. It is more reasonable to say that a man practicing medicine in violation of law prior to the taking effect of the act of 1903 is a beginner for the purpose of making such application, not being already a lawful practitioner.

Temporary Certificates Abolished.

The Supreme Court of Nevada holds, in the case of State vs. Lee, that that portion of the act of 1899 providing for the issuance of temporary certificates of the secretary of the State Board of Medical Examiners has no longer any force as a part of the law of that state regulating the practice of medicine and surgery. It was argued that for several reasons there had been no repeal of the 1899 provision by the act of 1905. But, taking the act of 1905 as a whole, the court thinks it clearly manifest that it was the intention of the legislature to provide that no one should be permitted to practice medicine, surgery or obstetrics in the state, except after obtaining a license so to do from the State Board of Medical Examiners. Lastly, it says that it was argued that, as only two regular meetings of the board are provided for per annum, a construction of the statute as here given would impose a great hardship on those seeking to enter the practice between such regular meetings, and to impute such intention to the legislature would be unfair to that body. Doubtless the legislature in the passage of the act of 1905 was considering the public good, rather than the convenience of private individuals; but the legislature also doubtless intended to obviate the inconvenience that applicants to practice might experience from being unable to longer obtain temporary certificates by the provision, not found in the act of 1899, permitting special meetings of the board to be held at the call of the president of the board on two weeks' published notice.

Walking Before Jury to Illustrate Injury.

The Supreme Court of Alabama says, in Birmingham Railway, Light and Power Co. vs. Rutledge, a personal injury case brought by the latter party, that it, of course, could not know precisely what figure the plaintiff cut when told by his counsel and allowed by the trial court, against the defendant's objection, "to walk the best he could before the jury." It would be difficult, if not impossible, to reduce the result of that experiment intelligibly to paper, and no effort to that end was made. So this court was not advised whether he did "his best" in the way of walking, or, to the contrary, did his best in the way of impressing the jury that his powers of locomotion had been greatly impaired. Certainly there was temptation toward the latter course; and it would seem impracticable by any sort of "cross-exercise," so to say, to test the good faith of his gait. Ethically speaking, there was grave doubt whether this man's physical organism should have been exposed to this temptation and to the strain necessarily incident to yielding to it, if he did yield. But on legal principle the evidence was on the same plane as that afforded the jury by a view of his person in repose, or by having him stand before them to show that one leg was longer than the other, were the shortening or elongation of a leg the thing complained of, or by exposing an arm to the jury on invocation to do his best in bending it at the joints, the claim being that it was stiffened, and therefore

incapable of normal use, and the like; and this court is not prepared to say that the lower court erred in allowing this walking illustration of the plaintiff's alleged injuries.

Presumptions as to Sanity and Suicide.

The Court of Appeals of Kentucky says, in Masonic Life Association vs. Pollard's Guardian, that the law presumes every man to be sane until the contrary is shown. Likewise the law indulges a presumption against suicide as being unnatural and immoral. But presumptions of this nature are indulged necessarily in the absence of proof. When the evidence shows and the fact is that the act of suicide was committed when the person was in sound mind, no presumption whatever can be indulged. It ceases to be a presumption and becomes a proven fact. Where the dead body is discovered in the presence of the implement of death, and the surroundings are such as admit of the conclusion either that it was self-inflicted or not, or was intentionally done or not, the evidence being wholly circumstantial, then the presumption against suicide, that is, intentional self-destruction, applies. Where, however, there are eye-witnesses to the occurrence whose testimony establishes the fact to be that the act was intentional, that the person was in a normal condition of mind, that he was not insane, that the motive probably influencing his action was the fear of disgrace, or of punishment for some past act, about to be disclosed or which had been recently discovered, then it would be illogical and contrary to the judgment and observation of mankind to say that the act was to be presumed in law to have been unintentional or the result of that insanity which deprives the mind of its knowledge of the probable effect of the act on life. Again, the court says, that the law is that if the insured intentionally took his own life, at a time when his mind was so far gone as to render him unconscious that he was taking his life, the act will not be deemed his, but will be regarded in law as an accidental killing. The converse is equally true—that although his mind may have been deranged, still if he had mind enough to know that the act would probably result in his death, and if he inflicts it with that intention, it is his act in law.

Surgeon's Claim Not Excepted from Exemption Law.

The Second Appellate Division of the Supreme Court of New York says that the practical question presented in the case of Taylor vs. Barker was whether the plaintiff, whose claim was based on personal services rendered by a surgeon to the defendant's wife, was entitled to an execution against the wages or income of the defendant under the provisions of section 1391 of the code of civil procedure. The plaintiff claimed, and he supported his claim by a long line of authorities, that words of the statute, "where a judgment has been recovered wholly for necessaries sold," was broad enough to cover the professional services of a surgeon rendered at the request of the defendant. But the difficulty was that, if it be conceded that these words might, under certain circumstances, cover this case, such construction was made impossible by that higher rule of statutory interpretation which commands the court to read the entire statute, and to give force and effect to the legislative intent. The language of the act is that "where a judgment has been recovered wholly for necessaries sold, or work performed in a family as a domestic, or for services rendered for salary owing to an employé of the judgment debtor, and where an execution issued on said judgment has been returned wholly or partly unsatisfied, and where any wages," etc., "are due and owing to the judgment debtor," the court may afford the relief from the exemption law provided in the statute. Whatever might be spelled out of the words "necessaries sold" under other circumstances, it must be entirely plain that the legislature by using the words "or for work performed in a family as a domestic," etc., intended to limit the scope of the statute to goods and chattels of the kind known as "necessaries" and to the special kinds of service mentioned in the act. The rule is as old as the common law that the express mention of one thing implies the exclusion of another, and it can not be doubted that this rule should be applied in the present case in arriving at the legislative intent. Hence the question presented in this case must be answered in the negative.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

December 30.

1 *Unconscious Value of Careful Clinical Examination of Patients. L. F. Bishop, New York.
2 *Transplantation of Veins and Organs. A. Carrel and C. C. Guthrie, Chicago.
3 Eucain Lactate as an Anesthetic for Operations in the Nose and Throat. T. J. Harris, New York.
4 A Plea for the Convict Insane. H. Phillips, Philadelphia.
5 Malarial Infection in Kurdistan. H. L. Underwood, Erzroum, Turkey.
6 Relations of Mind Rhythm to Nervousness. T. T. Evans, Philadelphia.
7 Indications and Contraindications to the Use of the Obstetric Forceps. J. T. Schell, Philadelphia.

1. **Unconscious Value of Careful Clinical Examination of Patients.**—Bishop emphasizes the fact that the careful clinical examination of a patient, carried on while the judgment is suspended, gives the opportunity for the subconscious development of a valuable opinion. This is entirely lost when the investigation is curtailed in time or details, and when the premature judgment is allowed to be formed. Therefore, it is most important that in every case in which a physician seriously undertakes the treatment, to make a very complete investigation into the history, the physical signs, and the laboratory findings, and, only after collecting these, to form a judgment as to the best course of treatment for that particular patient. The physician who is to give the opinion should, so far as possible, keep his mind free from conclusions until his final opinion is given on the case. It is the subconscious mental activity that produces those results that are considered so valuable in all professional work.

2. **Transplantation of Veins and Organs.**—Carrel and Guthrie obtained the reversal of the circulation in the jugular vein, in the carotid artery, in the arteries and veins of a limb. Important anatomic changes of a transplanted venous wall soon occur under the stimulus of the increased pressure. The thigh of a dog was completely amputated and afterward replanted by suturing the vessels, the nerves, the bones, the muscles, the aponeuroses and the skin. The pulsations of the popliteal and the posterior tibial arteries immediately became normal, and the femoral vein filled with dark blood. A kidney was extirpated and transplanted by anastomosis of the renal artery to the carotid artery, of the renal vein to the jugular, and the ureter was made to open into the lumen of the esophagus. On the third day after the operation the kidney was directly examined. Its circulation was found normal. A good excretion of urine was going on. The thyroid gland was extirpated and replanted with reversal of the circulation. On the ninety-fourth day after the operation, the gland was found to have a good circulation.

Medical News, New York.

December 30.

8 *Essentials of Successful Roentgen Ray Therapy. C. L. Leonard, Philadelphia.
9 *Clinical and Bacteriologic Study of the Communicability of Cerebrospinal Meningitis and the Probable Source of Contagion. (Continued.) C. Bolduan and M. E. Goodwin, New York.
10 Thiosinamine in the Treatment of Tinnitus Aurium. S. McCullagh, New York.
11 Observations on Leucoderma (Addison's Keloid). F. Robbins, New York.
12 Medical Department of Bilibid Prison and Some of the Diseases Among the Prisoners. W. R. Moulton, Bilibid, P. I.
13 Infection of the Gall Bladder in Typhoid Fever. S. P. Kramer, Cincinnati.

8. **Essentials of Successful Roentgen Ray Therapy.**—Leonard says that the Roentgen ray is a complex agent, produced by complicated apparatus, having varying qualities that must be adapted to the individual morbid process. Not only must the quality of the ray be adapted, but also its manner of application, so that its effective energy will be absorbed in the diseased area wherever situated in the body. It is so powerful an agent that it can do severe injury rather than good; so varied in its effects that timidity in its application will make it stimulate rather than retard the disease; so different in its qualities that it can be applied for long periods without producing benefit, if the quality appropriate to the lesion is not employed. Sound clinical judgment must determine the qual-

ity and dose to be used according to physiologic action required. Treatment must be carried forward with energy and judgment, especially in the treatment of malignant disease. This is essential to success, and to do it the operator must often approach close to the point where healthy tissue is devitalized, for in no other way can the energy of growth of the malignant cells be injured and their absorption secured. The effect produced on normal tissue, i. e., the skin, is the guide. That effect must be so severe as to threaten its vitality, if underlying malignant disease is to be influenced. Very frequently in treating malignant disease an erythema or even a so-called burn are produced. Although it is necessary to push treatment in some cases to a point where a slight burn is produced, it should not be understood that a severe burn is necessary, or that when it is produced with proper therapeutic dosage it is of slight moment compared with the result obtained.

9. **Bacteriologic Study of Cerebrospinal Meningitis.**—According to Bolduan and Goodwin, in the first week of the disease the meningococcus is present in the nasal mucus in fully half the cases; later in the disease it is found in a smaller fraction of cases. It also occurs in the nasal secretion of individuals who are in close contact with cases of cerebrospinal meningitis. In their series this occurred in about 10 per cent. of those examined. The disease seems distinctly communicable in the sense that the organism is transmitted from the nasal secretion of one person to another. The transmission of the organism, however, is not synonymous with transmission of the disease. The susceptibility of the individual is an important factor in the development of the disease. It seems unlikely that infection is frequently due to trauma or the result of overexertion. Cerebrospinal meningitis in other animals seems to have no connection with the disease in man. The subject, however, has not been sufficiently worked out to admit of positive statements. There was no evidence to show that the disease is carried by vermin or insects. The disease in some epidemics affects mostly infants; in others, older children, and sometimes chiefly adults. The reason for this is not at all clear. The period of incubation seems to be short, from one to four days. There was no evidence of the occurrence of "dwelling infections."

Medical Record, New York.

December 30.

14 Chronic Discharge in Organic and Functional Disorders of the Deep Urethra. J. M. Thompson, Boston.
15 *Epilepsy the Strangest Disease in Human History. W. P. Spratling, Sonyea, N. Y.
16 Bacteria in the Normal Adult Intestine, with Special Reference to the Etiology of Enterotoxismus. H. A. Houghton, New York.
17 *Osteosculpture; an Original Method for the Study of Osteology. H. C. Gifford, Syracuse, N. Y.
18 Dermoid Ovarian Cyst Simulating Floating Kidney. A. E. Isaacs, New York.
19 *Alkalinity of the Blood in Febrile Toxemia. F. W. D'Evelyn, San Francisco.

15. **Epilepsy; Strangest Disease.**—Spratling points out some of the remarkable features of this disease, such as its many types, uncertain etiology, and its occurrence at all ages and in all stations of society. He predicts that when we shall finally come fully to understand the necessity of treating the epileptic bodily and as an individual, as a preliminary step in the more specific treatment of his disease, and after we shall have sufficiently developed our laboratory methods, we will cure epilepsy as often as insanity is cured to-day, that is, in from 25 to 30 per cent. of all cases. He also speaks of the advantages attending the colony treatment of the disease, and urges widespread support of the principles of the National Association for the Study of Epilepsy.

17. **Original Method for Study of Osteology.**—Gifford presents a method of carving models of bones from blocks of plaster of Paris, which is intended to facilitate the study of osteology. A rectangular block of the material, whose dimensions equal those of the bone in question, is prepared, and on its six sides projections of the outlines of the bone are drawn. The plaster is then whittled away in conformity with these lines, thus forming a rough approximation of the bone, which can then be more carefully finished as to details.

19. **Alkalinity of the Blood in Febrile Toxemia.**—D'Evelyn's patient, on the fifth day of a severe pneumonic infection, went into collapse under conditions which seemed to indicate the presence of a fibrinous deposit in the right auricle extending into the adjacent ventricle. Mechanical respiration was maintained for a period of five hours while the medication consisted of three minims of liquor ammonia fortis, and five minims of a 10 per cent. solution of iodin, mixed just at the time of administration, and repeated at longer and longer intervals. Recovery took place, and the author ascribes it largely to the fact that the alteration in the alkalinity of the blood was recognized and corrected.

Boston Medical and Surgical Journal.

December 28.

20 *The Muscle-Splitting or McBurney Incision in Acute Appendicitis With or Without Abscess. L. R. G. Crandon and D. D. Scannell, Boston.
21 Municipal Control of Tuberculosis. E. O. Otis, Boston.
22 *Two Cases of Anatomic Anomaly of the Large Intestine. S. Robinson, Boston.

20. **Muscle-Splitting Incision in Appendicitis.**—Crandon and Scannell discuss 75 consecutive cases in which this incision was employed and conclude that the incision through the right rectus, as well as that through the right lineasemilunaris, is undesirable, because (1) it is usually not over the appendix; (2) it is frequently internal to the abscess, therefore giving mechanically inefficient drainage; (3) it offers in cases drained a distinctly greater chance of hernia. The muscle-splitting or McBurney incision is desirable in all cases of appendicitis, unless an abscess is obviously pointing in a remote or unusual situation, because (1) it opens most often directly over the appendix; (2) it can be enlarged by prolonging the split in each muscle-plane to whatever extent is desirable; (3) it can be drained for a short or a long time without danger of hernia.

22. **Anomaly of Large Intestine.**—In the first case reported by Robinson the sigmoid flexure apparently originated at the splenic flexure because the descending colon had not become adherent posteriorly, thus rendering a differentiation between sigmoid and descending colon impossible. From the splenic flexure to the rectum the bowel was freely movable, much distended, and elongated, measuring five feet and six inches. The diameter of the bowel varied from 3½ to 7 inches. The last five or six inches of small intestine adjoining the cecum were adherent to the posterior abdominal wall in a line from the right sacro-iliac synchondrosis to the lower border of the right globe of the liver. The ileum at this portion had lost its posterior peritoneal covering and was consequently subperitoneal. Its position and peritoneal relations then corresponded roughly to those of the normal adult ascending colon. The cecum was found resting at the upper border of the iliac fossa on the iliac crest. It could be moved upward or inward as far as the adherent last portion of ileum would permit it. The ascending colon was very movable. The second case was one of movable cecum. The small intestine is free as in the normal adult. The posterior surface of the mesentery of the ascending colon, however, has not become adherent to the posterior abdominal wall. The ascending gut has consequently no anchorage, and the cecum and appendix can be placed artificially in any part of the abdomen. The descending colon and sigmoid flexure were correspondingly movable, and the mesentery of the entire intestinal tube was free, except for a common median posterior attachment like that of the primitive mesentery of the young embryo.

New York Medical Journal.

December 30.

23 Annual Address of the President of the Medical Society of the County of New York. F. M. Crandall, New York.
24 Eclampsia. Review of the More Recent Methods of Treatment, with the Results. L. M. Gaines, Wake Forest, N. C.
25 Study of Contagion. (Concluded.) W. S. Cornell, Philadelphia.
26 Non-operative Treatment of Prolapsus Uteri. The Schatz Pessary, etc. K. C. Mead, Middletown, Conn.
27 Neurasthenia Among Blondes in the Southwest. V. E. Watkins, U. S. A.
28 Recognition of Eye Strain by the General Practitioner. C. P. Franklin, Philadelphia.
29 *New Drainage Tube. S. H. Kanner, New York.

29. **New Drainage Tube.**—The instrument devised by Kanner is made either of silver or gold and consists of a cannula, the

length of which must be varied with the thickness of the abdominal wall, the cannula being just long enough to enter the peritoneal cavity. The caliber may be varied according to the requirements of the case. Perforations in the side of the cannula help to insure drainage. A thin disc of metal fits against the abdominal wall. The tube is so made that a screw cap closes its outer end tightly. Whenever it is necessary, the screw cap is removed and the fluid drains off. In the intervals the abdominal plate is covered with zinc oxid adhesive plaster, which does not irritate the skin. The cannula is inserted with a trocar. The trocar is removed and the fluid rapidly drains through the cannula. The technic is exactly like that of an ordinary paracentesis performed under strictest surgical asepsis, except that the cannula is left, the screw cap applied, and the abdominal plate covered with zinc oxid adhesive plaster.

Lancet-Clinic, Cincinnati.

December 30.

30 Treatment of Acne Vulgaris. D. Lieberthal, Chicago.
31 *Ovarian Cystomata. L. P. Luckett, Terre Haute, Ind.
32 Where the Bad Did Good. B. S. Horne, Jonesboro, Ind.

31. See abstract in THE JOURNAL, Nov. 4, 1905, page 1435.

American Journal of Medical Sciences, Philadelphia.

November.

33 *Gonorrheal Septicemia and Endocarditis. W. S. Thayer, Baltimore.
33½ Case of Pneumococcus Sepsis. J. S. Thacher, New York.
34 *Intrapleural Lipoma; Acute Pericarditis; Pericardial Exploration. R. H. Fitz, Boston.
35 Treatment of Chronic Obstruction in the Larynx and Trachea. J. Rogers, New York.
36 Empyema of the Frontal Sinus. R. H. Johnston, Baltimore.
37 Personal Experiences with Empyemata of the Frontal Sinus. G. L. Richards, Fall River, Mass.
38 *The Larynx in Typhoid Fever. C. Jackson, Pittsburg, Pa.
39 Angioneurotic Edema Involving the Upper Respiratory Tract. T. H. Halsted, New York.
40 Milk and Scarlatina. A. Hamilton, Chicago.
41 *Cause of Pulsations in Empyema. W. J. Calvert, Columbia, Mo.
42 Investigations of the Influence of Adrenalin Chlorid on Toxic Doses of Cocain. J. M. Berry, Troy, N. Y.
43 Influenza Bacillus in Bronchiectasis. T. R. Boggs, Baltimore.

33. **Gonorrheal Septicemia and Endocarditis.**—Thayer cites additional cases in support of his contention that an acute urethritis is by no means infrequently followed by an endocarditis, either of specific gonorrheal nature or due to secondary or mixed infections which have found their portal of entry in the urethritis or have settled later on the primarily infected valves. The last two cases seen by Thayer presented the usual features of an ulcerative endocarditis—irregular, intermittent fever, chills, progressive anemia, and nephritis—developing, on the one hand, in a case of acute gonorrhea with arthritis about five weeks after onset, and in the other during a demonstrable urethritis, which the patient, a colored man, denied. In both of these cases, with a pure aortic lesion, there was a well-marked, presystolic, rumbling murmur, suggestive of mitral involvement. In one of the cases, a diagnosis of mitral disease was made. Cultures made from the blood during life were positive in one case, negative in the other. In both cases pure cultures of the gonococcus were obtained at necropsy from the affected valves. The remaining case, which is regarded as of especial importance, is an instance of gonorrheal septicemia, with continued fever of seven weeks' duration.

34. **Intrapleural Lipoma.**—Fitz believes that his case shows that subpleural lipomata may have a medical as well as a surgical interest. The patient, aged 34, always well, with the exception of a "typhopneumonia," was seized with a severe chill, followed by pain across the chest, aggravated on deep inspiration. There was a distressing cough, with rusty sputum and considerable dyspnea. The physical signs indicated consolidation of the left upper lobe. In the lower left axilla, corresponding to the region of the inferior third of the lower lobe of the lung, there were dullness on percussion and absence of respiratory and vocal sounds. The mid-axillary region was occupied by a wedge of normal resonance and respiratory sounds, with its apex in the vicinity of the left nipple. There were dullness, diminished fremitus, and feeble vocal and respiratory sounds in the left back between the angle of the scapula and the spine. Numerous medium, moist râles were heard at the base of the left lung behind. The left border of cardiac dullness was four and three-quarter inches from the median line, and the right border of dullness was at the right sternal edge. The apex beat was audible in the fifth intercostal space four and one-half inches to the left of the median line. The heart sounds were regular, rapid, and distant, the second sound was strong at the apex. Adventitious sounds were not heard. There were 41,200 leucocytes per cubic millimeter and 80 per cent. of hemoglobin. During the subsequent four days the temperature fell from 104 to 101, near which latter point it persisted. In the same period of time the pulse fell from 145 to 100, near which rate it subsequently remained. The respiration at first was from 50 to 35, but after five days ranged from 25 to 30, until within two days of death, when it rapidly rose to 45. For a few days the patient was mildly delirious; the white count remained high; the signs of consolidation persisted, but on the fifth day the failure to improve and the faintness of the heart sounds suggested the possibility of an acute pericarditis. Attention was constantly directed to the pericardium, as well as to the lungs and pleuræ, in search of an explanation of the persistent elevation of temperature and the continued leucocytosis. On the twentieth day of the disease it was noted that the signs of consolidation continued in the left lung. The right border of cardiac dullness remained at the right sternal edge, the cardiohepatic angle was obliterated, and the heart sounds were faintly heard. The pulse became paradoxical. Although dullness persisted in the left back between the angle of the scapula and the spinal column, the vocal resonance and fremitus and the respiratory sounds were normal. Repeated tappings of the pericardium failed to give any result. Death occurred two weeks after entering the hospital. On opening the pericardium a large amount, probably 500 c.c., of yellowish, opaque fluid gushed forth. Attached to the pericardium on the left side and apparently continuous with the fat tissue of the superior mediastinum was a large mass of fat tissue of about the volume of a newborn child's head, divided by delicate connective-tissue septa into larger and smaller lobules. It evidently occupied the inferior and anterior portions of the left pleural cavity, the left lung behind and above it. The large amount of fat tissue was more or less adherent by fibrous adhesions to the diaphragm, to the pericardium, to the parietal pleura, and to the inferior lobe of the left lung. Portions of it were left in the body on removal of the thoracic viscera. So far as could be determined, the shape of the mass of fat tissue was more or less that of a pear, the small extremity being attached most firmly to the external surface of the pericardial sac along a line extending from the anterior mediastinum in the region of the pulmonary artery (where it seemed to be continuous with the fat tissue of the pericardium) downward on the left side toward the posterior mediastinum. The mass of fat tissue appeared to be covered in places by a thin, shiny layer resembling the pleura. The appearances in the section indicated a lobar pneumonia in which resolution had not been thoroughly established. The congenital origin of the lipoma was indicated by the accompanying hypoplasia of the lower lobe of the left lung.

38. **Larynx in Typhoid.**—From laryngoscopic observations of 360 typhoid fever cases Jackson concludes that serious and fatal lesions of the larynx are much more frequent than is realized. Death may occur from laryngeal stenosis without even the existence of a laryngeal lesion being suspected in the absence of laryngoscopy. If pain and hoarseness be depended on, a diagnosis will seldom be made. Pain is often masked by toxemia. Cyanosis and dyspnea are rare, apnea is common. Unlike the complications of the exanthemata, ulcerative laryngitis complicating typhoid fever, in the likelihood of its occurrence, its course, and its termination, bears a close relation to the severity of the primary disease. The severity of the laryngeal lesion is in direct proportion to the toxemia, pyrexia not being in itself a factor, but only an index of the toxemia. Thrombosis of laryngeal vessels in the mucosa or deeper is probably the most frequent local initial lesion. Mixed pyogenic infections are the rule. Laryngeal lesions due to the

Bacillus typhi abdominalis are exceedingly rare. Prognosis as to life is good as considered apart from the general malady. Not only the life, but the laryngeal vocal and respiratory functions will be saved if a tracheotomy be done early. Death from laryngeal lesion means a death for want of an early tracheotomy. Prophylaxis consists in good ventilation, without draughts, sterile bedding, oral antisepsis, sterile food, and water. Potassium iodid, hydrargyrum biniodid, benzoin inhalations, and oral antisepsis are the best remedies. Early tracheotomy under local (Schleich solution) anesthesia will effect a cure in almost every case.

41. **Cause of Pulsations in Empyema.**—While working on cross-sections of a body with pleurisy of the left side, the anatomic relationship of the organs suggested to Calvert an explanation for the pulsating empyema which, on analysis, seems to fulfill all the requirements. He says that the requirements are a firmly fixed pulsating organ; contact of the pleural wall with this pulsating organ; distention of the pleural sac with fluid, air, or solid material, and a collapsed condition of the lung. The first requirement is fulfilled by the thoracic aorta; the second, by the normal relationship of pleural wall to thoracic aorta; the third, by the presence of fluid, pus, or a combination of these with air in the pleural cavity; and the fourth, by the collapsed condition of the lung in pleurisy and empyema. In the normal thorax the pulsations of the aorta are absorbed by the easily compressible lung tissues, consequently are not transmitted. When the fluid is present in the left pleural cavity, the lung is partially or completely collapsed, depending on the amount of fluid. As the fluid increases, the thoracic walls and mediastinum are pushed outward from the cavity of the left pleura and the lung becomes more and more collapsed. Until the lung is completely collapsed it naturally contains more or less air; consequently it is compressible and capable of absorbing, or compensating for, the impulse of the aorta. In time, however, a point is reached when further to compress the lung a pressure sufficient to expand still more the thoracic wall, more especially the intercostal spaces, is required. The impulse of the aorta transmitted to the pleural effusion will further expand the intercostal spaces or pulsation of the intercostal spaces is present. The pressure in the pleural cavity is transmitted in all directions at right angles to the pleural walls; consequently the aorta is pushed to the right as far as the left intercostal arteries permit and against the vertebral column. The arterial wall expands in all directions. The artery being firmly fixed against the vertebral column and nearly half covered by the parietal pleura, which does not offer a resistance equal to that offered by the vertebral column and stretched left intercostal arteries, the aortic pulsations must be transmitted to the fluid in the pleural cavity. This pulsation of the effusion is transmitted equally in all directions and must be taken up by the elasticity of the mediastinal membranes, diaphragm, and thoracic wall and the compressibility of the lung. Of these structures, the one with the greatest elasticity will absorb the greatest portion of the impulse. As this pulsation is purely hydraulic in principle, the nature of the fluid in the pleural cavity is of little or no importance. Consequently, in pleural effusions pulsation is not a positive sign of empyema. In the literature only three cases of pulsating pleurisy are recorded.

Medicine, Detroit, Mich.

December.

44 Case of Achrondroplasia. M. Michael, Chicago.
45 Points in the Treatment of Pneumonia. J. M. French, Milford, Mass.
46 *Echinococcus Multiloculáris. W. R. Smith.
47 Indications and Technic of Infrahyoid Pharyngotomy. C. G. Cumston, Boston, Mass.
48 Diabetes Insipidus Secondary to Brain Syphilis. E. Bowe, Jacksonville, Ill.
49 Epilepsy Treated Successfully by Administration of Nuclein. R. Dewey, Wauwatosa, Wis.
50 Influence of Adrenalin on the Circulatory System. J. Pruszynski, Warsaw.

46. **Echinococcus Multilocularis.**—According to Smith, every form of multilocular hydatid hitherto described is found in Australia and may occur in large numbers in animals from certain localities. A "tunneling" form in the liver not previously described is also found. The commonest form occurs in all parts of the lungs and liver, and consists of a number of "graded" loculi communicating with one another and varying in size from 1 to 10 mm. or more in diameter, with ectocyst and endocyst continuous throughout the loculi, the small loculi being barren, the large fertile, and all inclosed in a common adventitious fibrous capsule, which, with the contained cyst, forms a tumor that can be fairly easily "shelled out" of the organ in which it is found. The calcified pearl tumor, or beaded chain of tumors, is found most commonly at the transverse fissure and near the notch of the liver. A great ramifying hydatid of the lung is described, measuring 2 mm. in diameter, including the capsule, which is undergoing calcification. A three or more locular hydatid of the liver is described, measuring 4 mm. in diameter, including the capsule, which is undergoing calcification. The changes in the tissues of the lung and liver consist of (a) round-cell infiltration; (b) proliferation of the epithelial and connective tissue elements; (c) formation of giant cells in two ways; (d) adenomatous new growth; (e) formation of fibrous capsule by proliferation of the cellular and fibrous tissues of the part of the organ in which the hydatid grows; (f) calcification. Investigation of pathologic changes which occur in the lung in the presence of worms shows that they consist of (a) infiltration, (b) proliferation of the epithelial and connective tissue elements, (c) giant-cell formation, (d) adenomatous new growth, (e) fibrosis, and (f) calcification, and are not distinguishable from those to be observed in the case of hydatid tumors. No satisfactory explanation has been given of why mechanical irritation of one part should cause overgrowth in a part where the irritation does not and can not act mechanically. Hydatid cysts develop in the lumen of the bronchi, and attain the size of a hen's egg or larger, a favorite spot being just beyond the point where the cartilaginous elements cease. This confirms Dr. Dougan Bird's theory that eggs of the tenia may reach the lungs direct by the air passages and there develop. There is a large amount of evidence to show that hydatids reach their positions of further development in the lungs, liver, and elsewhere by the lymphatics, portal vein, and arteries. The thickness and amount of calcification of the fibrous capsule bear no relation to the age, size, position, or mechanical irritation of the tumor. There is an intimate connection between the cuticle (ectocyst) and the adventitious fibrous capsule. In some instances a layer of cells between the two appears to add to the thickness of both. There is evidence that the outer as well as the inner surface of the cuticle is cellular and that both have similar functions. There is no evidence of any causal connection between hydatids and tuberculosis, although the two conditions are very often associated. Suppuration, in healthy animals, of hydatid cysts, if it occurs at all, is extremely rare. Calcification may affect the fibrinous capsule, the laminated membrane, and the contents of the cyst, and may occur at any stage in the growth of the tumor. The theory that calcification is a process of degeneration due to the cutting off or diminution of the blood supply consequent on the increasing fibrosis of the capsule is disproved. Spontaneous cure is not uncommon and may occur in any organ of the body apart from any question of the presence of resisting structures. Multilocular hydatids are fertile at a very early stage of their existence. The worms often appear to have more slender necks than those in the unilocular cysts of the human subject. The multilocular form is not dependent on mechanical pressure. A false form may originate from unilocular cysts: (a) By two continuous cysts coalescing; (b) by constriction; (c) by ingrowth of the walls; (d) by pouching or evagination. A typical echinococcus multilocularis is multilocular from almost the earliest recognizable cystic stage, and can not, in the present state of our knowledge, be called merely a variety of any other form of hydatid.

49. **Epilepsy Treated Successfully by Administration of Nuclein.**—Dewey cites the case of an epileptic who was benefited remarkably by nuclein. The disease had existed for about 17 years. The convulsions were typical grand mal of rather severe grade. Because of an inoperable desmoid subserous growth of malignant character situated in the abdominal wall, the use of nuclein was begun in 1896. Hypodermic injections were given daily for about five weeks, in 20-minim doses, in-

creasing to 80 minims. The injections produced indurated lumps in the arms at the sites of injections, and some of these softened and were evacuated; they did not open spontaneously. After the formation of these masses the injections were discontinued and protonuclein given internally, gr. v, t. i. d., for six weeks or two months. After a month it was noticed that the pain of the tumor and a coincident irritation of the bladder diminished. A slight reduction in size of the tumor was also discernible. Early in 1897 he had increased frequency of convulsions and return of pain in the hypogastrium, and was given bromids and chloral, gr. x, at night, with some improvement. In March, 1897, the 1 per cent. nuclein solution was given (by the mouth) in doses of half a dram at bedtime for some weeks. There was some slight gradual improvement in all symptoms, both of epilepsy and tumor, and in May and June, 1897, the patient again took the hypodermic injections for five weeks, with some improvement in the general condition and no further appearance of indurated nodules, but the tumor was somewhat increased in size. In October, 1898, the patient seemed to be failing physically, and the tumor continued to give much pain. He could take little or no exercise, and mentally was impaired, forgetful, dull and depressed. In December, 1897, daily dram doses of nuclein solution were given hypodermically for some weeks. The nuclein injections were continued on into March, 1898. There was no abatement of the epileptic attacks, but the pain of the tumor was less and there was some retraction in size. In April and May, 1898, the patient took protonuclein powder for eight weeks. The convulsions continued to occur at the rate of two or three every month till November, 1898. In October the patient ceased the use of all bromids or chloral. He seemed to show physical improvement, became more active mentally and stronger physically, and was able to take more exercise. From this time physical and mental improvement continued. These were, perhaps, attributable in part to cessation of all sedatives and bromids and to the systematic hydrotherapeutic treatment with massage, hygienic regulation of life, etc., at a sanitarium; but these measures scarcely accounted for the recession of the tumor, which from that time up to October, 1905, has ceased to cause any inconvenience. After Nov. 29, 1898, there was no seizure till Feb. 22, 1899—a longer interval of freedom than had occurred for several years. There was no further convulsion until May 6, 1899; another occurred May 25; then there were none until July 16, 1899. Since October, 1898, up to the present time, attacks have occurred about twice in each year. The epilepsy is not cured, but has undergone an unusual amelioration. In 84 months there were ninety attacks, and it is probable many occurred that were not recorded. From November, 1898, to the present month, another period of 84 months, there have been, as nearly as can be ascertained after careful inquiry of patient and his family and friends, fourteen attacks.

American Journal of Obstetrics, New York.

December.

51 Fundamental Principles of Immunity. H. T. Ricketts, Chicago.
52 *Bacteriology of the Puerperal Uterus. H. M. Little, Montreal, Can.
53 Case of Congenital Heart Disease; Transposition of the Aorta and Pulmonary Artery; Patent Foramen Ovale and Ductus Arteriosus. A. G. Ellis, Philadelphia.
54 Hysterectomy for Fibroids of the Uterus. J. B. Deaver, Philadelphia.
55 Congenital Fetal Cysts of the Neck Obstructing Labor. F. J. Taussig, St. Louis, Mo.
56 Hemorrhages in Ectopic Pregnancies. T. J. Watkins, Chicago.
57 Hemorrhage of Placenta Prævia. A. McDermid, Chicago.
58 Sarcomatous Degeneration of a Fibroid Tumor of the Uterus with Repeated Hemorrhages into the Tumor. T. A. Eck, Philadelphia.

52. **Bacteriology of the Puerperal Uterus.**—In 50 consecutive women in whom the lochia was examined by Little immediately after labor and on the third and seventh days of the puerperium, the uterus was absolutely sterile in 92, 50, and 44 per cent. of the cases, respectively. Counting as negative the cases in which gonococci were present, the figures are 96, 72, and 67 per cent. The puerperium was normal in 40 and febrile in 10 cases. In the former, the percentages of absolute sterility were 92.5, 62.5, and 50 per cent., as compared with 90, 40, and 20 per cent. in the latter; or, counting as negative the gonorrheal cases, the figures 95, 85, and 70 per cent., and 100, 50, and 50 per cent., respectively. The results were considered as positive when bacteria were found only in smear preparations or only in cultures, as well as when present in both. It is probable, therefore, that a certain number of the positive results were due to contamination, and that the uterus is really sterile in a larger proportion of cases than is indicated by the figures. The streptococcus was found but once in the entire series, being present in a febrile case on the third day, but absent on the first and seventh days.

St. Paul Medical Journal.

December.

59 *Extirpation of the Faucial Tonsil. F. C. Todd, Minneapolis.
60 Difficulties of Diagnosis of Diseases Located in the Epigastric Region. W. Courtney, Brainerd, Minn.
61 Cretinism. A. G. Liedloff, Mankato, Minn.
62 Thoughts on Longevity. T. G. Stephens, Sidney, Iowa.

59. **Extirpation of Faucial Tonsil.**—The method which Todd has found most successful and now practices is as follows: In nearly all cases a general anesthetic is administered, and those operations performed under a local anesthetic are on adults or older children, who have good control of the throat. In such cases, the tonsil is anesthetized with a 10 per cent. solution of cocain, the crypts being cleaned out, the cocain is swabbed repeatedly into these holes after using a suprarenal preparation, as Todd has found that the contraction of the blood vessels helps to prevent the toxic effect of the cocain. Even when cocain is used, certain portions of this operation are apt to be painful. When the patient is under a general anesthetic the head is dropped over the end of the table, and the operator sits on a stool facing the patient's face, which is exactly upside down. Strong direct daylight is used, the mouth gag is inserted, the patient's tongue is held by an assistant standing at the side of the table, the tonsil is grasped with the tonsil forceps, and with tonsil knives the anterior pillar is dissected loose from the tonsil, care being taken not to injure the pillar, for it is from the pillars that most hemorrhages arise, and it is not desirable to injure these muscles if we would secure perfect results. With a pair of slightly curved scissors the tonsil is separated above and below, being all the time pulled out with the forceps, the forceps are then released and the Kratzmüller cold wire snare applied. After placing the loop over the tonsil, this is pulled out with the forceps again and well into the snare, an assistant aids further by exerting pressure from the outside on the neck, thus pushing the tonsil into the snare. By this time the tonsil is only attached by a pedicle, and by rapidly bringing the handles of the snare instrument together the wire is brought into the cannula, and the tonsil is thus peeled out. If the technic is perfect, the entire tonsil is enucleated, the back surface being smooth and covered with membrane. If a portion remains, it should be pulled into the snare and removed, but this should not be necessary if the operator has been careful. There is less hemorrhage than with the tonsillotome or scissors. Todd says that, if the pillar is cut with the knife or scissors (an accident that need not occur), there may be bleeding, and if it is severe it may be stopped by ligating the pillar.

Pennsylvania Medical Journal, Athens.

November.

63 *Value of Spinal Analgesia in Shock. Study in Surgical Physiology. J. M. Wainwright, Scranton.
64 *Direct Fixation of Fractures. J. B. Roberts, Philadelphia.
65 *Uterine Curettage; Its Indications and Contraindications; Its Technic; the Complications Which May Attend or Follow the Procedure and Their Proper Treatment. E. E. Montgomery, Philadelphia.
66 *Significance and Management of Chronic Uterine Hemorrhage. G. E. Shoemaker, Philadelphia.

63. See abstract in THE JOURNAL, Oct. 14, 1905, page 1188.

64-66. **Id.**—Nov. 4, 1905, pages 1437 and 1439.

99. **Id.**—Oct. 28, 1905, page 1354.

American Journal of Urology, New York.

November.

67 Locomotor Ataxia and the Urologist. J. W. Courtney, Boston, Mass.
68 Pyelitis. W. Ayres, New York.
69 Renal Neoplasms Originating from Aberrant Suprarenal Tissue Germs. F. Peuckert.
70 Case of Vesico-Intestinal Fistula. J. Mittag, Wittenberg, Germany.

University of Pennsylvania Medical Bulletin, Philadelphia.

November.

71 Development of Modern Medical Education. A. Stengel, Philadelphia.
72 Medullary Giant-Cell Sarcoma with Cyst of the Lower End of the Ulna. G. G. Davis, Philadelphia.
73 Collection of an Analysis of the Reported Cases of Osteo-arthritis of the Spine (Spondylitis Deformans). D. C. Guffey.

American Journal of Surgery, New York.

November.

74 Paraffin in Surgery; a Critical and Clinical Study. W. H. Luckett and F. I. Horn, New York.
75 Inguinal Hernia in Early Childhood. Plea for the Radical Treatment of all Cases. E. W. Peterson, New York.
76 Hysterectomy or Myomectomy? A. H. Goelet, New York.
77 The Suture as a Factor in Primary Union. J. B. Morgan, Augusta, Ga.
78 Present Status of the Treatment of Malignant Tumors, with Especial Reference to Radiotherapy. W. E. Deeks, New York.

Journal of Mental Pathology, New York.

November.

79 Pathology of the Neurofibrils. U. Cerletti and L. Sambalino. Rome, Italy.
80 A Specific Human Energy and Its Economic and Social Significance. L. G. Robinovitch, Paris.

Journal of Experimental Medicine, New York.

November.

81 Studies on Calcareous Degeneration. O. Klotz, Montreal.
82 Physiology of Heart-Block in Mammals, with Especial Reference to the Causation of Stokes-Adams Disease. J. Erlanger, Baltimore.
83 Action of Glycerin on Bacteria in the Presence of Cell Exudates. J. J. Kinyoun, Philadelphia.
84 Cytotoxic Serum Produced by the Injection of Nucleoproteids. S. P. Beebe, New York.
85 Contribution to the Technic of Making the Eck Fistula. F. C. Herrick, Cleveland.
86 Presence in the Bone-Marrow of Enzymes Resembling Those of Leucocytes. E. L. Opie, New York.

Iowa Medical Journal, Des Moines.

November.

87 Tuberculous Peritonitis. O. J. Fay, Des Moines.
88 Venereal Disease Innocently Acquired. H. B. Young, Burlington.
89 Case of Recovery from Tetanus. J. C. Hancock, Dubuque.

Interstate Medical Journal, St. Louis, Mo.

November.

90 Blood Vessels of the Lymphatic Gland. W. J. Calvert, Columbia, Mo.
91 Reflex of the Tendo Achillis. C. G. Chaddock, St. Louis.
92 Study of the Anatomy of Congenital Dislocation of the Hip After Manipulative Reduction. N. Allison, St. Louis.
93 William Harvey and Our Debt to Him. E. P. Lyon, St. Louis.

Colorado Medicine, Denver.

November.

94 Submucous Window Resection of the Nasal Septum. W. C. Bane, Denver.

Southern California Practitioner, Los Angeles.

November.

95 Aims and Methods in Medical Diagnosis. A. Stengel, Philadelphia.
96 Relation of County Medical Association to the Public Health of Los Angeles. G. H. Kress, Los Angeles.
97 San Jacinto Trails. B. Trask.
98 Wine and the Poets—A Critical Study of the Poet's Devotion to the God of Wine. J. Madden, Milwaukee.

Buffalo Medical Journal.

November.

99 The Student and the Young Doctor. G. F. Cott, Buffalo.
100 *Real Triumph of Japan or the Conquest of the Silent Foe. L. L. Seaman, New York.
101 Hygienic and Dietetic Treatment of Gonorrhea. H. G. Spooner, New York.

Journal of the Medical Society of New Jersey, Newark.

November.

102 Early Clinical Diagnosis of Pulmonary Tuberculosis. S. A. Knopf, New York, N. Y.
103 What the State Is Doing for Her Consumptive Poor. C. J. Kipp, Newark.
104 Prevention of Consumption. T. W. Harvey, Orange.
105 Treatment of Tuberculosis. I. H. Hance, Lakewood.
106 Points in the Diagnosis and Treatment of Pulmonary Tuberculosis. T. Senseman, Atlantic City.

Journal Missouri State Medical Association, St. Louis.

November.

107 Uterine Displacements. A. R. Kieffer, St. Louis.
108 Abdominal vs. the Vaginal Route in Pelvic Surgery. C. L. Hall, Kansas City.
109 Abortion Followed by Thrombophlebitis and Embolic Pneumonia. F. Reder, St. Louis.
110 Operations for the Relief of Cicatricial Orbit. J. M. Ball, St. Louis.
111 Substitution of the Organic Silver Preparations for Silver Nitrate in the Treatment of Diseases of the Eye. J. H. Gross, St. Louis.
112 Limitation of Rest in the Treatment of Fractures. R. M. Funkhouser, St. Louis.

American Practitioner and News, Louisville.

November.

113 Arteriosclerosis. M. M. Pearson, Bristol, Tenn.
114 Cancer of the Rectum. F. W. Samuel, Louisville.
115 Intestinal Obstruction. I. Abell, Louisville.

Woman's Medical Journal, Toledo, Ohio.

November.

116 When to Operate on Uterine Fibromyomata. R. T. Bullard, Los Angeles, Cal.
117 Status of the Fetus in Utero. H. Hughes, Mankato, Minn.

Journal of Medical Research, Boston, Mass.

November.

118 Micro-Chemical Reactions and Their Value in the Study of Cancer Cells. M. Tracy, New York.
119 Structure and Biology of the Yeast Plant. F. Mutchler.
120 Etiology and Pathology of Vaccinia in the Rabbit and in Man. W. T. Howard, Jr., and R. G. Perkins, Cleveland, Ohio.
121 Production of Active Immunity with the Split Products of the Colon Bacillus. V. C. Vaughan, Jr., Ann Arbor, Mich.
122 Study of Epidemic Cerebrospinal Meningitis. W. J. Elser, New York.
123 Synthetic Culture Media and the Biochemistry of Bacterial Pigments. M. X. Sullivan, Providence, R. I.
124 Observations on Bactericidal Complement. E. Steinhardt, New York.
125 Relative Influence of the Blood Fluids and the Bacterial Toxins of Phagocytosis. E. L. Walker, Boston.
126 Experimental Production of Glycuronic Acid in Dogs. A. E. Austin, Boston.
127 Fermentation Tube in the Study of Anaërobic Bacteria, with Special Reference to Gas Production and the Use of Milk as a Culture Medium. T. Smith, H. R. Brown and E. L. Walker, Boston.

The Laryngoscope, St. Louis, Mo.

November.

128 Treatment of Atrophic Rhinitis by Means of an Oro-Nasal Canula. S. Iglauer, Cincinnati.
129 Diffuse Infiltration of the Right Side of the Nasopharynx with Paresis of Cranial Nerves. O. T. Freer, Chicago.
130 Diseased Faucial Tonsil and Its Operative Treatment. W. R. Murray, Minneapolis.
131 Formalin in the Treatment of Diseases of the Ear, Nose and Throat. O. J. Stein, Chicago.
132 Clinical Significance of Otalgia. P. Fridenberg, New York.
133 Epidural Abscess of the Temporal Region and Abscess of the Frontal Lobe; Operation; Recovery. G. Klaer, Copenhagen, Denmark.
134 Case of Laryngeal Tuberculosis. O. J. Stein, Chicago.
135 Case of Cyst of the Thyro-Glossus Duct. J. J. Kyle, Indianapolis, Ind.
136 Experiments on Animals with Ethyl Chlorid. S. H. Large and E. D. Brown, Cleveland, Ohio.
137 How Much Attention Should We Give the Middle Turbinate Body in Diseases of the Accessory Sinuses. C. M. Robertson, Chicago.

Wisconsin Medical Journal, Milwaukee.

November.

138 Surgery of the Prostate. H. H. Young, Baltimore.
139 Infantile Scurvy. A. W. Gray, Milwaukee.
140 Early Diagnosis and Early Operative Treatment of Acute Infectious Osteomyelitis. K. W. Doege, Marshfield, Wis.
141 Relation of Bovine Tuberculosis to Public Health. H. E. Scott, Argyle, Wis.

Medical Herald, St. Joseph, Mo.

November.

142 Points in the Home Treatment of Pulmonary Tuberculosis. J. W. Kime, Ft. Dodge, Iowa.
143 Carelessness in the Use of the Curette. H. E. Pearse, Kansas City.
144 Newspaper Press and American Civilization. A. S. Ashmead, New York.
145 How to Teach Surgery. T. E. Potter, St. Joseph, Mo.
146 How to Teach the Specialties. W. L. Kenney, St. Joseph.
147 How Gynecology Should Be Taught. O. B. Campbell, St. Joseph.
148 Quack Methods and Habit Cures. A. L. Gray, St. Joseph.
149 Physician and Consumptive. E. L. Perry, Kirkwood, Mo.

Medical Examiner and Practitioner, New York.

November.

150 Physique Standards and Mortuary Statistics. S. T. M. Dermith, Denver.
151 Paresis and Its Relation to Life Insurance. G. G. M'Connell, Chicago.
152 Relation the Medical Examiner Bears to the Applicant. I. Holdom, Detroit, Mich.
153 Benefit of Listing Discredited Examiners. S. F. Rose, Port Huron, Mich.
154 Crusade Against Tuberculosis. W. K. Harrison, Chicago.
155 Medical Examiner—The Ideal and the Real. D. H. Keller, Louisville, Ky.

Journal of Infectious Diseases, Chicago.

November 25.

156 Some Artefacts in Mouse Carcinoma. G. N. Calkins and G. H. A. Clowes, Buffalo.
157 Antagonism of Bacteria and Their Products to Other Bacteria. L. F. Rettger, New Haven, Conn.
158 Relation Between Serum Resistance and Virulence. D. W. Day, Chicago.
159 Bacteriologic Examination of a Plague Rat. W. B. Wherry, Manila, P. I.

160 Observations on Acute Ascending Paralysis. P. Bassoe, Chicago.
161 Studies in Meningococcus Infections. D. J. Davis, Chicago.
162 Study of the Dejecta of Normal Children and of Those Suffering from Acute and Subacute Diarrhea with Reference to *B. Dysenteriæ*. K. R. Collins, New York.
163 Common Mosquitoes of Bihé and Ballundo Districts, Portuguese West Africa. F. C. Wellman.

Denver Medical Times.

November.

164 Treatment of Typhoid Fever. C. B. Van Zant, Denver.
165 Id. A. D. Atwood, Denver.
166 Id. G. M. Edwards, Denver.
167 Id. C. G. Hickey, Denver.
168 Id. G. D. Crews, Denver.
169 Id. H. W. Rover, Denver.
170 Id. M. Kleiner, Denver.
171 Prevention of Typhoid. C. E. Cooper, Denver.
172 Case of Addison's Disease with Apparent Recovery. F. M. McCartney, Denver.
173 Relation of Diagnosis to Life, Accident and Health Insurance. G. W. Miel, Denver.
174 Sub-mucous Resection of the Nasal Septum. J. M. Foster, Denver.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

December 16.

1 *Carcinoma Is a Parasitic Disease. H. T. Butlin.
2 *The Heredity of Insanity. A. R. Urquhart.
3 *Prognosis in Mental Diseases. R. Jones.
4 Postmortem Examinations Which Do Not Reveal the Cause of Death. F. J. Smith.

1. **Carcinoma Is a Parasitic Disease.**—Butlin insists that carcinoma is a parasitic disease, not in the limited sense in which this term is sometimes employed, as synonymous with infective, but in the larger and wider sense in which it should be employed, to express the fact of one organism living at the expense of another, each pursuing its otherwise separate and independent existence. He maintains that the carcinoma cell is an independent organism, like many a protozoon; that it lives a life which is wholly independent and proper to itself; and that it lives as a parasite in the body of the animal which is affected with carcinoma, deriving its nourishment from this host and doing nothing to repay the host for sustenance of which it robs him. The biology of the carcinoma cell is discussed at great length. Butlin urges that a careful study be made of the life history of this cell outside the body of the host, and with this end in view repeated attempts should be made to induce the parasite to thrive and to multiply under artificial conditions which will permit the study of every phase of its existence.

2. **Heredity of Insanity.**—During twenty-five years Urquhart has had 1,104 cases under his care, representing 886 patients; 623 of these individuals were hereditarily predisposed to insanity, eccentricity, neuroses, paralysis or alcoholism, while 394 had a distinctly insane heredity. During the last ten years 304 of 375 persons showed a neurotic and insane heredity, while the heredity of insanity occurred in 180 cases.

3. **Prognosis in Mental Diseases.**—Jones has taken the histories of 230 male patients whose fathers or mothers were known to have been insane. In 10 of these cases both parents were insane; 3 of the 10 patients died of general paralysis. Of the total 230 males the high proportion of 27.4 per cent. had previous attacks; 30 patients died from general paralysis, a proportion of 13 per cent., a slightly higher proportion than occurs in the admissions as a whole, and it is thus seen that general paralysis not only may but does present a hereditary history of insanity. The number of deaths was 87, a proportion of 38 per cent., which is abnormally high, and demonstrates that hereditary insanity tends to extinction. The recovery rate is the same, namely, 38 per cent., which is also higher than among the general admissions. Of those who recovered 13.8 per cent. relapsed during the twelve years, again a slightly higher ratio than occurs among the total recovered of all classes (13.2 per cent.). These facts tend to show that patients with a hereditary neurosis (taking an attack of insanity to indicate this) recover quicker, that they relapse sooner, and that the others die sooner. This is epigrammatically foreshadowed by a high authority, who states that hereditary cases are easier broken down but are easier reset, and that as to recovery, "if a man is to become mad, he had better have a mad ancestry," meaning that the prognosis as to recovery is better when a hereditary taint is recorded.

The Lancet, London.

December 16.

5 Habit Spasm in Children. G. F. Still.
6 New Synthesis of Tyrosin from Anhydrous Prussic Acid and Oxy-Benzaldehyde. P. W. Latham.
7 *Investigations on the Nervous Manifestations of Acute Rheumatism. F. J. Poynton and A. Paine.
8 Leptus Autumnalis and Its Skin Lesion. W. MacLennan.
9 *Treatment of Tuberculosis of the Urinary System by Tuberculin. J. G. Pardoe.
10 Esculin in Conjunction with Finsen Light in the Treatment of Lupus Vulgaris. G. H. Graham.

7. **Nervous Manifestations of Acute Rheumatism.**—Poynton and Paine believe that eventually rheumatic chorea will prove to be a local infection of the nervous system and that most of its symptoms are the result of a slight meningo-encephalitis and possibly meningo-myelitis. Their reasons for this belief are: 1. They have isolated and cultivated the diplococcus from the cerebrospinal fluid in 4 cases of fatal rheumatism, in 3 of which there was chorea at the time of death. 2. They have produced twitching movements, arthritis, endocarditis, and pericarditis by intravenous injections of the diplococcus into rabbits. 3. They have demonstrated the presence of diplococci three times in the cerebral pia mater and once in the brain from cases of chorea. 4. They have demonstrated them in the brain and pia mater of the rabbit that had shown the twitching movements. They report the case of a boy 13 years old who was suffering from arthritis of the ankles and knees. The family history showed that the boy's father had suffered from rheumatic fever, but the patient himself, except for an attack of measles and an operation for adenoids, had enjoyed excellent health. He appeared to be suffering from a very ordinary attack of rheumatic fever, which yielded to rest and salicylate of sodium within four days. Seventeen days later, without any apparent cause, the temperature rose to 102.4; the boy complained of headache and vomited. On the second day following he became unconscious, with fixed, dilated pupils and general muscular rigidity, alternating with flaccidity. The axillary temperature was 102.4; the rectal temperature was 106.4. The boy died comatose the next day. The authors consider this a case of rheumatic meningitis, the clinical diagnosis being confirmed at the autopsy. They believe that these nervous lesions are comparable to rheumatic lesions of other organs.

9. **Tuberculin in Tuberculosis of Urinary System.**—Pardoe used the tuberculin TR, subjecting it to a temperature of 60 C. for one hour. In the greater number of his cases very little local effect was noted at the site of the injection; in 2 cases a decided reaction followed. The tuberculin was given hypodermically with a sterilized syringe, beginning with a dose of 1/500 mg. and increasing this dose every other day until a definite reaction was obtained. The dose was then reduced to that quantity which apparently caused no reaction, and was then given steadily once a week for long periods. During the progress of the treatment the patient's weight and temperature were carefully noted. A cystoscopic examination was made from time to time. Of 21 patients so treated 5 are apparently cured, 4 show a very marked improvement, 6 show no improvement, and 6 succumbed. In one of these Pardoe thinks the tuberculin was the direct cause of death. He says that the more circumscribed the infection the better are the results. In not one case in which the cystoscope showed diffuse infection was much benefit noted. The cases of apparent cure occurred when only a small amount of bladder surface appeared to be involved. He inclines to the belief that for vesical tuberculosis tuberculin is the best remedy at our disposal.

Glasgow Medical Journal.

December.

11 *Mode of Spread of Breast Cancer in Relation to Its Operative Treatment. W. S. Handley.
12 The Ophthalmoscope in General Medicine. A. M. Ramsay.

11. **Cancer of the Breast.**—According to Handley, cancer of the breast spreads primarily in the parietes along the deep fascia, and not along the skin; hence it appears to be unneces-

sary in all but exceptional cases to remove such a large area of skin as to prevent complete suturing of the wound. He thinks that as a rule it suffices to remove a circular area of skin centered on the primary growth and from 4 to 5 inches in diameter. The incision he makes consists of three parts: 1. A ring incision, as practiced by Mitchell Banks, from 4 to 5 inches in diameter, accurately centered on the growth and surrounding it at a safe distance, slightly tailing off into part 2 above, and into part 3 below. 2. A curvilinear incision for giving access to the axilla. The axilla is opened by turning forward a flap consisting of skin and a thin layer of subcutaneous fat, whose base lies along the anterior maxillary fold. The axillary incision begins at the lower edge of the pectoralis major, close to its insertion. It ends, also at the lower edge of the pectoralis major, by joining the annular incision. It crosses the base of the axilla, and marks out an almost semicircular flap of skin, whose convexity reaches back nearly to the edge of the latissimus dorsi. It affords perfect access to the axilla and good drainage afterward. 3. A linear incision coming off from the lower and inner part of the annular incision and passing downward for about 2 inches along the linea alba. Its object is to give access for the removal of the deep fascia over the upper part of the abdominal wall. Without it this important step in the operation can not be properly carried out. Handley says that the most convenient way of suturing this incision must be a matter of trial in each case, according to the precise situation of the growth in the breast. Usually, perhaps it will be best sutured in a triradiate form. It will, however, never result in a rectilinear scar, nor in one lying along the anterior axillary fold, nor does it remove any presumably healthy skin. It, therefore, avoids the faults of the usual incision without, as Handley believes, any corresponding disadvantages. The pull of the arm being at right angles to the direction of the scar, the cicatrix more readily becomes mobile on the chest. During this process the scar may be stretched to a width of nearly an inch.

Australasian Medical Gazette, Sydney.

November 20.

13 Standard of Ethics and Work in Medicine. D. Colquhoun.
14 Otitis Media, with Involvement of the Lateral Sinus and Temporo-Sphenoidal Lobe. J. Cox.
15 X-Rays in the Diagnosis of Intrathoracic Morbid Conditions. W. H. Read.
16 *Case of Extro-Version of the Bladder; Extraperitoneal Implantation of the Ureters into the Rectum. S. Newland.
17 One Hundred Consecutive Abdominal Sections Without a Death. W. J. S. McKay.
18 Case of Landry's Paralysis. A. S. Joske.

16. **Extroversion of Bladder.**—Newland reports a successful case of extraperitoneal implantation of the ureters in extroversion of the bladder which had existed since birth. The patient was 7 years of age. At the age of 3 a plastic operation had twice been unsuccessfully performed. On examination a pyriform area of bright red mucous membrane was to be seen in the pubic region. The stalk lay downward and was formed by the penis, which was in a state of complete epispadias. Above and at the sides the junction of skin and mucous membrane was well defined. The latter showed a scarred condition due to the previous plastic operations. The exposed surface of the bladder ended below in the cleft urethra, in the proximal portion of which the vera montanum could be recognized. A transverse sulcus, due to the folding of the urethral on the vesical mucous membrane, existed. When this was opened out by gently drawing the penis downward, the vera montanum and ureteral orifices were more distinctly exposed. The latter lay at the summits of two papillæ, from which urine gushed forth intermittently, but seldom simultaneously. There was no ulceration of the vesical mucous membrane nor irritation of the surrounding skin. The cleft prepuce was very large. The scrotum was well developed but bifid. The testicles were incompletely descended. They lay below the external ring and could be pushed into the scrotum. No hernia existed. The pubic bones were widely separated. The gap could be felt distinctly. The inner surface of the thighs, instead of meeting at a narrow angle at the perineum, were separated by a wide interval. The anus was dilated and the rectum washed out with saline solution. The vesical ends of the ureters were then freed according to the method employed by Peters. A No. 3 Jacques catheter was passed into each ureter for about 2 inches and fixed to the urethral papilla, the one with fine silk the other with a fine catgut stitch. A circular incision of as great extent as possible was then made through the mucous membrane around each papilla. This was deepened until the bladder wall was completely cut through. The separation of the ureter from the loose cellular tissue, in which it lay along the wall of the pelvis, was easily effected. Each ureter was exposed for from 1½ to 2 inches. With the left forefinger in the rectum and the right in the suprapubic wound, the anterior and lateral walls of the rectum were defined. A Lister's sinus forceps was passed into the rectum and its fine point thrust through the lateral wall about 1½ inches above the anus. The small wound was dilated by opening the blades of the forceps. The catheter in each ureter was grasped by the sinus forceps and drawn through the wound in the lateral wall of the rectum on the corresponding side. The ureter followed the course of the catheter, the rosette of vesical mucous membrane passing through the wound in the rectum much as a button passes through a buttonhole. The catheter in the left ureter was forthwith removed. The rosette on the right side was not a large one, and it seemed better to leave the catheter in the ureter. The remainder of the vesical mucous membrane was not interfered with. The wound left by the transplantation of the ureters was gently packed with iodoform gauze. The free end of the catheter in the ureter was passed into a bottle containing boracic lotion. The operation, though tedious, was well borne, and the patient did not suffer from shock. Two days after the operation the patient retained his urine from two to three hours during the day, but was troubled with incontinence at night. He gradually acquired more and more control over the flow of urine until at the end of the month he was able to remain dry all day and only occasionally wet his bed at night. Six months later the remaining mucous membrane of the bladder was dissected away. The raw surface was diminished in size by the insertion of transverse Halstead sutures of catgut. The skin was then freed all around, and extensively undermined. As the skin still could not be sutured across the raw surface without tension, a curved incision, with the convexity upward and outward, was made on each side from the upper limit of the raw surface left by the ablation of the vesical mucous membrane to the groin. The wound, when closed, presented a triradiate appearance. At the same time an attempt was made to close the proximal portion of the urethra. An incision was made along the junction of skin and mucous membrane. A flap of the latter was dissected up on each side and sutured the one to the other. The skin was undermined and sutured over the urethral mucous membrane. The whole wound healed well, with the exception of the small portion lying over the urethra. A month later another attempt was made to establish a urethral canal. On this occasion the penile urethra was treated as well. The mucous membrane was dissected up on each side and sutured. The skin was joined over this. There was considerable tension, and union again failed. Two months later the whole of the urethral mucous membrane was dissected away. An incision was made through the prepuce at its junction with the glans, and it was then stripped from the under surface of the penis. A large flap of skin was thus obtained. It was next buttonholed, and the glans penis passed through the opening. The flap was then sutured along the dorsum of the penis. On this occasion the wound healed well and the patient was able to return home.

Bulletin de l'Acad. de Médecine, Paris.

19 (Year LXIX, Nos. 39-40.) *Iodure d' arsénic contre la scrofule et la scrofulo-tuberculose de l'enfant. R. Saint-Philippe.
20 Resultats de l'ablation du cristallin transparent dans la myopie forte. De Font-Reaulx and Chauvel.
21 Nouvelles recherches physiologiques sur l'air confiné. N. Grehant.
22 Sur la question de l'alcoolisme et de la syphilis sur les feuilles de décès (declaration on death certificates). Netter, Fournier and others. See foreign news, page 52.

19. **Arsenic Iodid in Treatment of Scrofula.**—Saint-Philippe has treated 200 children during the last decade with arsenic iodid and has found it very valuable in scrofula and scrofulo-tuberculosis. The hypertrophied glandular apparatus is in a

condition of functional hyperactivity while at the same time there are signs of nutritional disturbances. The iodo-arsenical medication meets both these indications. He orders from 10 to 40 drops of a 1 per cent. solution of arsenic iodid, morning and evening.

Semaine Médicale, Paris.

23 (XXV, No. 50.) *Hysteric Blindness.—La cécité hystérique. Dieulafoy.

23. **Hysteric Blindness.**—In one of the two cases described the blindness was the only apparent manifestation of the hysteria. The patient was a young man of 25, a mason. On his way home from work he suddenly became blind and could not remember the names of the streets where he wanted to go. He was supposed to be drunk, and was taken to the station and then to the hospital. There was a history of well treated syphilis three years before after an unfortunate love affair. He recovered his sight in about two weeks under application of a magnet to the side, bread pills and suggestion, but the blindness recurred six weeks later and again persisted for two weeks. The second patient was a woman of 44, long known to be hysteric, and completely blind and hemiplegic during the last ten months. Vomiting and intense headache had been noted as the blindness first came on. Dieulafoy has collected 59 cases of hysteric blindness including these which he reports. In 5 patients the blindness was the sole manifestation of the hysteria, appearing in apparently healthy persons. The blindness is absolute, but the pupil reflex is retained. Contracture of certain muscles has been frequently noted, especially the muscles of and around the eye. The media of the eye were found normal. The duration of hysteric blindness may be weeks or months, but no case is known in which vision was not finally recovered except in the above case still under observation. Traumatism may cause hysteric blindness which may not develop until weeks or months after the accident. It is liable to persist indefinitely, although in some cases it vanished permanently in a few weeks or months. Severe headache generally preceded the onset of the blindness in all cases.

Archiv f. Verdauungs-Krankheiten, Berlin.

Last indexed XLV, page 1450.

24 (XI, No. 5.) *Zur Klinik der Speiseröhrenkrankheiten (affections of esophagus). F. Ehrlich.

25 Elimination of Alloxur Bodies on Meat Diet.—Zur Frage der Alloxurkörperausscheidung unter dem Einfluss des Fleischgenusses. C. v. Rzentkowski (Warsaw).

26 *Laws of Mechanics and Hydrostatic Pressure as Basis for New Points of View in Regard to Origin and Treatment of Functional Stomach Affections.—Gesetze der Mechanik, etc. Agéron (Hamburg).

24. **Affections of the Esophagus.**—Ehrlich relates the particulars of 19 cases to illustrate various points in the diagnosis or treatment of affections of the esophagus. In 2 cases the esophagoscope revealed a cancer in the cardia before it was palpable or had induced cachexia, or while total extirpation was still possible. In one case, a man of 43 complained for three weeks of a difficulty in swallowing. Two brothers had died from cancer of the esophagus. Nothing abnormal could be discovered with the esophagoscope, but the disturbances continued and finally a ring-shaped cancer became apparent in the esophagus, completely closing the lumen. A Kader fistula into the stomach answered its purpose perfectly for nearly a year, when the patient succumbed to metastasis in the lungs. In introducing a laminaria tent Ehrlich bores a hole in one end about 1 cm. deep and inserts a fine sound in the hole, winding the stout thread from the tent around the handle. This holds the tent firm, while it does not interfere with vision as much as when the tent is held with forceps.

26. **Treatment of Stomach Troubles.**—Agéron's work is based on more than 5,000 examinations of the stomach content and conditions. They appear to show that the standards for gastric digestion and evacuation of the stomach generally accepted are incorrect. A test meal of 250 gm. tea, 100 gm. bread and butter and one egg is totally evacuated in two hours, while six are required for the evacuation of a meal of soup, 250 gm. meat with potato, vegetable and preserves, under normal conditions, the individual sitting or standing. Normal conditions presuppose an elastic counter pressure on the part of the walls of the stomach to the pressure of the fluids in the stomach. If for any reason this elastic counter pressure is defective, the weight of the ingested fluids forces down the stomach and it sags below the horizontal line of the umbilicus, the surface of the fluids being so low down that the weak muscular contractions of the stomach walls fail to drive the fluid toward the pylorus. Evacuation, consequently, is delayed and the food is not properly expelled as it should be to ensure normal intestinal digestion by the due interaction of the digestive reflexes at the proper time. By lying down, especially if the individual lies on the right side and with the pelvis raised, the food in the stomach is brought up to the pylorus, and evacuation proceeds easily and rapidly. The benefits of "mast cures," that is, rest in bed with forced feeding, are due to the horizontal position assumed and the consequent relief of the sagging stomach. The characteristic element of a physiologic stomach is the tension of the stomach wall after ingestion of food and the concentric counter-pressure thus exerted. The motor sufficiency of the stomach is dependent on the degree of tension and the intensity of the counter-pressure. The large majority of stomach disturbances are merely the result of a permanent disproportion between the weighing down of the stomach walls by fluid or other food, overhastily ingested, that is, taken in too brief a time, and the physically possible counter-pressure on the part of the walls. Agéron adds that the evidence of dynamic disturbances in the stomach can be obtained with certainty only by repeated test rinsings. The sagging of the fundus and greater curvature causes a vicious circle, reducing constantly more and more the power of concentric contraction of the stomach walls. Pregnancy will sometimes cure by lifting up the stomach and thus bringing the contents nearer the pylorus, so that they can be readily evacuated. Horizontal rest cures are indicated in all cases of motor gastric disturbances dependent on a reduction in the power of concentric counter-pressure in the muscles of the walls of the stomach. In conclusion he emphasizes the point that the positive or negative result of the horizontal rest cure may be accepted as a criterion for or against the necessity for operative treatment of protracted gastric affections with severe motor disturbances.

Berliner klinische Wochenschrift.

27 (XLII, No. 43, Oct. 23.) Comparative Anatomy of Brain.—Ueber die Herkunft des Hirnmantels in der Tierreihe. L. Edinger.

28 Wert der refractometrischen Eiweiss-Bestimmung bei der Differential-Diagnose zwischen Exsudaten und Transsudaten (refractometric differentiation). K. Engel (Koranyi's clinic, Budapest).

29 Ueber Dialyse und einzelne ihrer Anwendungen (applications of dialysis). R. P. van Calcar (Leyden).

30 *Zum Kapitel der nervösen Blasenstörungen (bladder disturbances). J. Vogel.

30. **Nervous Bladder Disturbances.**—Vogel reviews considerable literature on this subject, his general conclusion being that some organic cause for the bladder disturbance can almost always be found on diligent search. The nerve connections between the abdominal organs are remarkably close and complex, which may render difficult the differentiation of the source of the trouble. He mentions examples and also cites cases of true neuroses. They are especially frequent among public speakers and actors, who dread to be disturbed by desires to urinate during their appearance in public. He mentions the case of a clergyman who always catheterized himself before his sermon to make sure that his bladder was empty. Peculiar bladder disturbances are sometimes noted in patients in whom the cystoscope reveals extreme hypertrophy of the bladder with the muscular bundles very apparent (*"Balkenblase"*). Some of these patients present indications of incipent tabes. There are no true bladder crises, but merely occasional sensations of oppression and discomfort in the bladder region, and urination may be difficult. There are never increased desires to urinate. The disturbance in the central nervous system causes disturbance in the bladder functions which in time induce severe anatomic changes in the bladder. A disturbance in some part of the urogenital system may cause pains to radiate to some other part of the system, as for instance, the pains radiating to the glans penis in case of stone in the bladder, or radiating to the bladder from the prostate in case of chronic inflammation of the latter. The bladder pains are liable to

persist after the trouble in the prostate has subsided. Residual urine has been noted in young men in case of chronic prostatitis, evidently due to spasmodic contraction of the sphincter elicited from the prostate. Frequent desires to urinate are sometimes the only symptom of incipient tuberculosis of the kidney. Hirt recommends the tuberculin test in these puzzling cases before the urine and bladder show essential changes. Enuresis at night has sometimes been observed in women as an additional symptom. Disturbances in the female genitalia, as also in the rectum, are liable to cause bladder disturbances. Lead poisoning and carbonic acid gas, turpentine and other intoxications frequently render urination difficult. Referring to the nervous retention of urine after operations, etc., Vogel remarks that patients with chronic cystitis or prostatitis are undoubtedly unfavorably affected by sudden chilling, especially of the skin. Appendicitis is liable to induce morbidly increased desires to urinate.

Dermatologische Zeitschrift, Berlin.

Last indexed XLV, page 140.

31 (XII, No. 6.) Ueber Besonderheiten beim Lupus erythematosum. W. Bornemann.
32 Ueber eine durch Scilla maritima hervorgerufene vesikulöse Dermatitis nebst Bemerkungen über die Bedeutung der Raphiden. E. Hoffmann.
33 (No. 7.) Peculiar Changes in Skin Over Meningocele.—Eigentümliche Veränderungen in der Haut über eine Meningocele. M. Wolters.
34 *Roentgen-Behandlung der Sycosis simplex. G. Scherber.
35 Fall von gonorrhoischer Myelitis. M. Bloch.
36 *Zur operativen Behandlung der Hirn-Gumma und der syphilitischen Schädeldachnekrose (of skull). Voss (Breslau).
37 (No. 8.) Ueber einen Fall von z. T. gangränösen Chancres mixtes an Lippe und Zunge mit später auftretendem Pseudochancre am Unterarm. E. Hoffmann.
38 Zur Kenntnis des Pigmentes. H. Vörner. (Concluded.)
39 Ein Fall von herdförmiger Pigmentanomalie der Kopfhaare (of hair). H. Vörner.
40 Zur Therapie des Unterschenkelgeschwürs mit "doppelter Binde" (double bandage for leg ulcers). (Vornersche Methode). H. Rath.
41 Importance of Pigment for Light-Colored Races.—Die Bedeutung des Pigments für die hellfarbigen Menschenrassen. F. B. Solger.
42 Cutaneous Affections in Relation to Metabolism.—Krankheiten der Haut in Verbindung mit den Krankheiten des Stoffwechsels. L. D. Bulkley.
43 (No. 9.) Exsudationen und Keratosen. Prof. J. F. Selenew (Charkow).
44 (No. 10.) Zur Anatomie der Schleimhaut-Affektionen bei Lichen planus (Wilson). F. v. Poor.
45 Ueber das Zusammentreffen von Lichen ruber und Diabetes mellitus nebst Mitteilung des histologischen Befundes bei Lichen sclerosus. E. Hoffmann.
46 Ueber Fibroma molluscum Virchow. H. Vorner.
47 Zur Pathologie der spitzen Kondylome. J. Heller.
48 *Relations Between Skin and Kidney Affections.—Welche Beziehungen bestehen zwischen Haut- und Nierenkrankheiten. B. Glaserfeld (Berlin). (Concluded.)
49 Ein aseptisches Taschen-Injektions-Besteck (pocket case for injections). Blanck (Potsdam).
50 (No. 11.) Ueber einen eigentümlichen Fall zirkumskripter, profuser Hauttalg-Sekretion (of sebum). F. v. Marschalko.
51 Ueber den jetzigen Stand unserer Kenntnisse von der Spirochæte pallida. H. Hübner.
52 *Weitere Mitteilungen über den Wert der statischen Elektrizität für die Behandlung parasitärer Dermatosen. Suchier (Freiburg).
53 *Die Erzielung von Analgesie auf endermatischem Wege. L. Fürst.
54 (No. 12.) *Behandlung der chronischen Gonorrhoe mittelst Glimm-Licht ("glimmer light"). H. Strebel (Munich).

34. **Roentgen Treatment of Sycosis.**—Scherber describes the histologic findings in a case of simple sycosis cured by Roentgen exposures. The active hyperemia of the inflammation was superseded by congestive hyperemia under the influence of the exposures. The curative action of the rays is probably due to the destruction of the cocci, supplemented by the absorption-promoting influence of the exposures.

36. **Operative Treatment of Gumma of the Brain and Necrosis of the Skull.**—Voss reviews the cases of operative treatment of syphilitic cranial and cerebral lesions that have been published, and reports a case from his own experience. He cites 20 communications on the subject. The operation was not undertaken until after the complete failure of antisyphilitic treatment. In one instance a gummatous lesion of the frontal brain was supposed to be an affection of the motor region owing to the Jacksonian epilepsy observed. His patient was a woman of 71 in good circumstances who presented extensive necrosis of the forehead, reaching from the bridge of the nose nearly to the vertex and beyond a line through the outer margin of the orbit on both sides. The first signs of ulceration had been noted 20 years previously and the ulceroserpiginous lesion had gradually attained its present proportions without impairment of the general health or causing brain symptoms until a recent secondary meningitis developed. The patient had never had any specific treatment. The necrotic part of the skull was removed and also a softened gumma beneath. As the patient roused from the anesthetic the meningitic symptoms abated and her mind was clear. Energetic mercurial treatment was instituted at once and the patient regained health rapidly. There was no temperature and the pulse was regular until signs of intercurrent hypostatic pneumonia developed, and the patient succumbed about two weeks after the operation. In a second case, sequestra from a syphilitic lesion in the parietal bone were removed on several occasions, with the complete subsidence of all symptoms. The patient was a woman of 39. Energetic mercurial treatment had failed to relieve the symptoms of pressure on the brain.

48. **Relations Between Skin and Kidney Affections.**—Glaserfeld did not find evidences of a kidney affection in idiopathic atrophy of the skin, lichen or prurigo. He does not admit any causal connection between kidney affections and progressive and retrogressive nutritional disturbances, or neuritic and parasitic dermatoses, or chronic infectious processes. Occasionally the cutaneous and the kidney affection may both be due to a single primary cause. Kidney affections are frequent, however, in inflammations and circulatory disturbances in the skin. They were found almost invariably in impetigo herpetiformis, in erythemata, urticaria, purpura, eczema, acute pemphigus, circumscribed edema and Raynaud's disease. The kidney trouble is generally mild, and comes under the vague heading of "toxic nephritis." On the other hand, kidney affections are liable to be accompanied by pruritus, dermatitis exfoliativa, furunculosis, urticaria, eczema, gangrene of the skin, pemphigus and erythemata. The cutaneous affections in this case are very rebellious and generally yield only to treatment addressed to the kidneys. The article is an extensive one, based on large personal clinical experience and research.

52. **Static Electricity in Treatment of Parasitic Dermatoses.**—Suchier calls attention to the cure of chronic eczema, fungoid mycosis and superficial cancer which he has effected by the use of static electricity. The power need not be more than 0.5 horse power, the rotations not less than 500 nor more than 1,000, and the electrodes must terminate in a non-conducting tip of cork or wood. This enhances the effect remarkably. Seven cases are described and illustrated as typical examples of the excellent results attained. The article concludes with an array of arguments in favor of the parasitic theory of the origin of cancer. The behavior of the cancer cells under static electricity is a strong point in favor of this view, he remarks.

53. **Analgesia by Endermatic Route.**—Fürst applies the term endermatic to the application of drugs rubbed into the skin. He has found that gentle rubbing is not experienced unpleasantly even in case of articular rheumatism, while it is the best way to administer the salicylates, he thinks. He uses Bengue's formula: 10 equal parts of methyl salicylate and menthol with 12 parts of lanolin. He rubs a piece about the size of a bean into the joint, using a wad of cotton, and then covers the part with an impermeable dressing to prevent evaporation, repeating the application every three or four hours. The spot is washed off with tepid water twice a day. The above combination is the most powerful analgetic he has ever tried, while it does not irritate the skin. He has found it equally valuable in neuralgias, in pleuritic pains, in ovarialgia and in 2 cases of painful gastric ulcer.

54. **Radiotherapy of Chronic Gonorrhea.**—Strebel's efforts to apply radiotherapy to urethral affections have been duly chronicled in these columns. He found that it was impossible to influence the urethra from without; the light must be introduced into the urethra to obtain any effect. He accomplishes this by a system of quartz rods on which a powerful electric light is concentrated. The quartz transmits the light as ultra-violet rays alone. This system is too elaborate for general use, and he has now simplified the technic, using a contrivance by which a spark passing through a quartz tube

emits a bright light, which he calls the "glimmer light." A spark from 15 to 20 cm. long is sufficient for the purpose. The quartz tube is inserted and the current turned on for from forty minutes to two hours, the aim being to induce an inflammatory reaction to the light inside the urethra. He relates his experience in detail with 3 out of 55 cases in which he has effected a cure by this means. All were of the chronic, rebellious type, refractory to all other methods of treatment. The influence of the light treatment was so unmistakable that he believes that it deserves wide attention. He has not had a failure in any instance. His "glimmer light" contains more active rays than any incandescent light he has tested.

Monatsschrift f. Geb. u. Gynäkologie, Berlin.

Last indexed XLV, page 143.

55 (XXI, No. 6.) Zur Kasuistik der Nabelzysten (umbilical cysts). Bondi.
56 *Gangrän nach Eklampsie. I. Gutbrod.
57 Fall von vaginaler Ovariotomie während der Geburt (during delivery). E. Petersen.
58 *Ueber die Therapie bestimmter, der Behandlung schwer zugänglicher Endometritis Formen. O. Schaeffer.
59 *Ueber Dauererfolge nach Ventro-fixatio uteri (permanent results). F. Weindler.
60 (XXII, No. 1.) *Einfluss der Menstruation auf den Gesamt-Organismus der Frau (influence of Menstruation). M. Tobler.
61 *Vitality of the Prematurely Born.—Ueber die Vitalität frühgeborener Kinder. A. Ostreil.
62 *Phototherapy in Gynecology.—Die chemischen Strahlen in der gynäkologischen Therapie und die Anwendung der Phototherapie bei Krebs und Tuberkulose der Gebärmutter. E. Curatulo.
63 *Ein Beitrag zur Kasuistik der Lithopädien. R. Lumpe.
64 Abnabelung und Nabelerkrankung (affections of umbilicus). Hartz.

56. **Gangrene After Eclampsia.**—Gutbrod has had 2 patients with eclampsia exhibit gangrene of the skin. One patient required amputation of the leg. The kidneys were so seriously affected that they were unable to eliminate all the eclampsia poisons, and he thinks that their elimination through the skin entailed the gangrene. The kidneys could not eliminate even albumin. He has always noticed that very slight albuminuria is the invariable precursor of eclampsia.

58. **Treatment of Rebellious Forms of Endometritis.**—Schaeffer discusses principally the treatment of the obstinate mixed infections of the uterus in middle age and also hemorrhagic cirrhotic metritis at the menopause, exfoliation of the mucosa during menstruation, and other rebellious and comparatively inaccessible affections of the uterus. He points out that glandular hyperplasia with hypoplasia of the uterus, occurring in girls or young women, is frequently a manifestation of tuberculosis, and general measures to combat tuberculosis are especially indicated in these cases. He outlines the special indications for each form of metritis, including also what he calls hypoplasia glandularis endometrii and hypoplasia or dysplasia deciduæ basalis.

59. **Remote Results of Ventrofixation.**—Weindler has been investigating the present condition of 51 women on whom ventrofixation was done by Leopold between 1896 and 1903. Of this number 38 were personally examined at least three years after the operation, and all but 8 were found absolutely free from disturbances. Eleven of the women had borne children since and the pregnancy and delivery were normal in 8 cases; the children were born before term in 2 cases. Leopold now has a record of 124 cases of ventrofixation with the best possible after-results. His technic seems to answer all purposes and Weindler says that it is applicable to all cases of retroflexion. When this technic is closely followed, he claims no disturbances are observed in subsequent pregnancies.

60. **Influence of Menstruation on the General Organism.**—Tobler of Florence has been investigating the local and general disturbances and the influence of menstruation on the physical and mental capacity, extending his research to 1,020 women. His summary states that the menstrual period in the women of our day is generally a time of more or less physical depression and languor. This is not as Nature intended nor is it necessary. It is the result of modern modes of life, and of a less vigorous constitution. The products of metabolism are increased in amount at this time by the periodical excitation from the genital system, but instead of being systematically utilized to the profit of the body, they accumulate and have a toxic action. Many women do not experience this menstrual physical depression at first, but it gradually comes on them later, showing its acquired character. Other women never experience any physical depression or languor at this time. Still others find it a period of exalted vital energy and exhilaration. This latter is the theoretical ideal, and, he thinks, is probably what Nature intended for the period in which a new living being can be formed and developed.

61. **Vitality of Prematurely Born Children.**—Ostreil's assertions are based on the literature and on examination of 1,542 prematurely born children at the Prague maternity. He accepts 44 cm. as the minimum height and 2,000 gm. as the minimum weight for the children under discussion, and states that he was unable to find that they showed less resisting powers during their later life than children born at term. The morbidity and mortality during infancy and early childhood were not materially higher than those of ordinary children.

62. **Chemical Rays in Gynecology.**—Curatulo describes and illustrates an apparatus he has devised for the purpose of applying the chemical rays to the interior of the uterus. They have a sedative and resolving action as well as a bactericidal, and he thinks that they are indicated in cancerous and tuberculous processes in the female genitalia. He urges further trials of what he calls hystero-photo-therapy, prophesying a brilliant future for it.

63. **Lithopedion.**—The lithopedion in the case reported by Lumpe was extracted from the abdomen of a woman of 64 twenty-five years after the rupture into the abdomen of a seven months' tubal pregnancy.

Therapie der Gegenwart, Berlin.

Last indexed XLV, page 1529.

65 (XLVI, No. 11.) *Aetiologie und Therapie der Arteriosklerose. G. Klemperer.
66 Erfahrungen über intravenose Collargol-Injektionen bei Erysipel. A. Rittershaus.
67 *Zur Kenntnis der fieberhaften tertiär-syphilitischen Organ-Erkrankungen. W. Sobernheim.
68 Wann muss der Arzt auch in der Land-Praxis zur Operation bei Blinddarmentzündung raten (operation in appendicitis)? F. König.
69 *Zur Behandlung der Diarrhoe mit flüssiger Gelatine. G. Mann and Herzberg.
70 *Zur Behandlung der Blenorrhœ. Cecikas (Bucharest).
71 *Zur radikalen Behandlung des Pruritus ani. Klein.

65. **Causes and Treatment of Arteriosclerosis.**—Klemperer describes 2 cases of arteriosclerosis in men of 37 and 44 who had long smoked from 30 to 100 cigarettes a day or from 6 to 12 cigars. The circumstances of the cases suggest that the tobacco alone was responsible for the arteriosclerosis. In another man of 45 sexual excesses were likewise the sole etiologic factor that could be discovered. The patient was unmarried and of a robust constitution. A third patient was a man of 35, married for 11 years, with two healthy children 9 and 10 years old. Since the birth of the last child intercourse had been frequent, but exclusively by coitus interruptus. These 2 cases, Klemperer states, emphasize the importance of the sexual factor in the etiology of arteriosclerosis. He reports in conclusion a case of pronounced arteriosclerosis with enlargement of the heart in a man of 52 somewhat addicted to alcohol and tobacco. The patient took 1 gm. of sodium iodid regularly for two years with remarkable subsidence of all his symptoms, the dosage one tablespoonful of a 5 per cent. solution in a glass of milk after dinner. The heart has returned to normal size and the blood pressure and tension of the vessel walls are much reduced. The systolic murmur has vanished, possibly from regeneration of something abnormal in the wall of the aorta. The patient has eaten ordinary mixed diet without regard to its lime content, but he was advised against carbonated baths.

67. **Febrile Tertiary Syphilitic Affections of Viscera.**—Sobernheim's first patient was a woman of 36 with enlarged liver and spleen. Once or twice a week the temperature rose abruptly, accompanied by a violent chill, vomiting and colic pains in the stomach. The temperature subsided each time with a sweat. Quinin was given without effect and also arsenic. As the liver region grew more and more painful and the febrile attacks

more frequent, the abdomen was opened and the liver exposed. It presented the typical characteristics of the syphilitic liver, and was twisted on its axis, with adhesions connecting it with the stomach. The patient was put on potassium iodid and all symptoms subsided. During the six months since she has had no disturbances, and although the liver and spleen are still enlarged they are not sensitive to pressure. The second patient was a syphilitic man of 44 whose right shoulder had been fractured in 1903. Since then there had been pulmonary disturbances, a cough and inability to lie on the left side without distress. The temperature rose high in the evening, with a slight chill; induration was noted in the lower lobe and apex of the left lung. In six weeks the entire lung had become transformed into pure cirrhotic tissue and the patient succumbed to hemoptysis. A remarkable feature of this case was the absolute inefficacy of all treatment, specific or otherwise, to influence the temperature and course of the affection. The postmortem findings are described; the changes found in the glands were sufficient to account for the hectic fever.

69. **Fluid Gelatin in Diarrhea.**—Mann and Herzberg corroborate Cohn's statement that fluid gelatin has an excellent effect in certain cases of diarrhea. If a 10 per cent. solution in distilled water is boiled for six hours and then filtered, the resulting fluid keeps clear and fluid for days. Herzberg has for years ordered a soup made of calves' feet (about one pound to one quart of water, boiled down to one pint), in diarrheal conditions in children and in typhoid fever. It checks the diarrhea while nourishing the patient. In one case severe intestinal hemorrhage was apparently arrested by it. Mann urges further trials of the fluid gelatin in non-tuberculous intestinal ulceration. In his experience the persistence of the diarrhea under the gelatin treatment indicated a tuberculous process. Such do not seem to be influenced by it.

70. **Heat in Treatment of Gonorrhea.**—Cecikas has had unusually excellent results in his local treatment of gonorrhea since he has been heating the fluids injected to about 117 F.

71. **Thermocæuterization for Pruritus Ani.**—Klein applied the flat Paquelin burner to the anus and around it in a severe case of pruritus ani in a child. The cure was complete. This treatment, he suggests, might prove useful in certain cases of persistent pruritus vulvæ.

Riforma Medica, Naples.

Last indexed XLV, page 1530.

72 (XXI, No. 28.) *Carcinoma della testa del pancreas. D. Pirrone.
73 *La narcosi morfioscopolaminica associata alla cloroformica. N. Palermo.
74 (No. 29.) *3 Casi di destrocardia acquisita. M. Landolfi.
75 Sulla presenza dello spirochæte pallido nel sangue e nelle manifestazioni secondarie dei sifilitici. I. Bandi and F. Simonelli.
76 *Dell'edema acuto angioneurotico o morbo di Quincke. A. Zilocchi.
77 *Le esclusioni intestinali. P. Longo. (Commenced in No. 26.)
78 (No. 30.) *La cura della rabbia coi raggi del radio (radium treatment of rabies). G. Tizzoni.
79 Nuovo contributo alla patogenesi della malattia di Dupuytren. A. Testi.
80 Contributo alla diagnosi delle ferite penetranti nell'addome con lesione intestinale (diagnosis of stab wounds of abdomen). A. Poppi.

72. **Cancer of the Head of the Pancreas.**—In the case described there were no symptoms suggesting disturbance in the pancreas. A secondary carcinoma in the liver masked the primary growth in the pancreas, and the absence of glycosuria or any symptoms pointing to the pancreas caused this organ to be disregarded. Chronic icterus with absolute and constant intestinal acholia does not belong to the clinical picture of any variety of primary cancer of the liver. When it is observed, even with entire absence of symptoms pointing to any other organ, yet it should suggest that the primary neoplasm may be found in some other organ, pressure from which might obstruct the flow of bile.

73. **Scopolamin-Morphin Anesthesia.**—Palermo reports from Tricomi's clinic 154 cases in which the operation was performed under chloroform, preceded by an injection of scopolamin hydrobromate and morphin. He was favorably impressed, especially with the relief from apprehension before the operation and the calm sleep for two hours afterward. The patient comes to the table drowsy or actually asleep, and there is no excitement and no vomiting afterward, with rare exceptions. (See reply to correspondent on this subject on page 1817 of the last volume of THE JOURNAL.)

74. **Acquired Dextrocardia.**—Landulfi describes 3 cases in which the heart was found at the autopsy to have undergone a double rotation on its vertical axis, bringing the apex to the right of the sternum, and on its longitudinal axis, bringing the left ventricle forward. There was also torsion of the pedicle of the heart, with a slight fold in it, not large enough to close the lumen of the aorta. The cause of the displacement was pyothorax or pneumothorax, or both. The cases indicate the importance of prompt thoracentesis when there is reason to suspect displacement of the heart.

76. **Acute Angioneurotic Edema.**—The patient was a somewhat dyspeptic man of 43 who had long suffered from attacks of supposed asthma. Four years ago edema of the face was observed, rapidly increasing to large proportions in an hour and a half and then disappearing nearly as promptly. These attacks of edema were sometimes preceded by pruritus; gradually a larger extent of surface became involved and the attacks lasted longer, sometimes for two days. The edema generally appeared during an interval between attacks of asthma. They were never observed together. Each generally followed some excess in diet, and came on abruptly, subsiding in the same way at first, but gradually the attacks became longer and the intervals shorter. Zilocchi is convinced that both are manifestations of angioneurotic edema, and that they are generated by intoxication and infection following disordered metabolism.

77. **Exclusion of the Intestine.**—Clinical experience and experimental research have convinced Longo that it is practicable and advantageous under certain circumstances to shut off part of the intestine from the digestive tract. The technic which offers the best results is, he believes, the exclusion of the affected portion of the bowel by implanting its lower end in the lower part of the intestinal tract. This obviates the inconvenience of an artificial anus, while it also avoids the dangers of total exclusion of part of the intestine. In the case described the colon and cecum were excluded from the intestinal tract. Secretions accumulated in the excluded gut and putrefied, with resulting perforation and fatal peritonitis. In experiments on dogs this result was also observed, but nothing of the kind occurred when the excluded portion was implanted in the gut below, affording an outlet for its secretions, which were voided with the stools. Dogs thus operated on are lively and in good health months afterward.

78. **Radium Treatment of Rabies.**—See account of Tizzoni's research, page 2033 of the last volume of THE JOURNAL.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

MANUALE DELLA MALATTIE DEI BAMBINA ("Treatise on Diseases of Children"). By Drs. J. M. Taylor and W. H. Wells. Translated into the Italian by Dr. M. Flamini, with preface by Professor L. Concetti, and annotations by Professor F. Valagussa. Cloth. Pp. 862. Turin, Italy: Unione Tipografico-Editrice. 1905.

VERHANDLUNGEN DEUTSCHEN ROENTGEN-GESELLSCHAFT. Band I. Verhandlungen und Berichte des Ersten Kongresses vom 30. April bis. 3. Mai, 1905, in Berlin. Redigiert von Dr. Albers-Schonberg-Hamberg. Paper. Pp. 248. Hamburg: Lucas Grafe & Sillem, 1905.

MONTHLY SUMMARY OF COMMERCE AND FINANCE OF THE UNITED STATES. Department of Commerce and Labor, Bureau of Statistics. No. 4. Series 1905-1906. October, 1905. Paper. Washington: Government Printing Office. 1905.

MATERIA MEDICA FOR NURSES. By J. E. Groff, Ph.G., Third Edition Revised. Based on the Eighth Decennial Revision of the U. S. Pharmacopeia. Cloth. Pp. 176. Price $1.25. Philadelphia: P. Blakiston's Son & Co. 1905.

MACKINAC, FORMERLY MICHILIMACKINAC.. A History and Guide Book, with Map by J. R. Bailey, M.D., Commissioner of Mackinac Island State Park. McMillan Edition. Fifth Revision. 1904.

COUNSELS AND IDEALS. From the Writings of William Osler. Cloth. Pp. 277. New York: Houghton, Mifflin & Co. 1905.

Cloth. Pp. 231. Price, $1,000. Ann Arbor Plant: Richmond & Backus Co.